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FROM THE EDITOR

THE LEHIGH REVIEW: TRANSITIONS

I am very excited and proud to present the twenty third edition of the *Lehigh Review: Transitions*. Over the past three months, I have been extremely privileged to work with the staff of the *Lehigh Review* as we not only reviewed but compiled the journal that you now hold in your hands.

Transitions has sought to encapsulate and showcase the best research and artwork that Lehigh University undergraduate students have accomplished, and make this work available to the public. The pieces in *Transitions* talk not only of changes through time that our society has, or will, face, but also of shifts in dialogue and generations. As our society and culture continues to shift, certain issues in this stage of transition are examined by our authors in a new, critical light. Tackling issues such as city fragmentation, *Dubai: the Spectacle of Flows*, offers a unique perspective on both the ground-breaking architectural accomplishments of luxurious Dubai as well as the economic downfalls that the city overcame while building one of the tallest buildings in the world. Building on this, *An Ethical Study of Nuclear Waste Disposal at Yucca Mountain*, is a well-written, current piece that examines both the architectural difficulties of implementing a national nuclear waste depository but also the moral facet of creating such a program in close proximity to human life that can easily be altered by an accident at such a site. Both *Playboy: A Portfolio of Art and Satire and Technology, Trends, & Transformation: Examining the Evolution of Poster Design* have explored historical changes that have occurred in the world of print, as artists and authors have experimented with different methods of self-expression. Finally, *The NBA and LeBron James: An Analysis of the Relationship Between Media Representations and American Society* not only defines how society's perception of the NBA has shifted over time with the guidance of a new director, but also highlights how influential artists such as Kendrick Lamar have caused this.

Each piece presented in *Transitions* is unique in its approach to its subject matter, is well-written and thoughtful, and originality of thought and quality of research resounds in them. Our included artwork speaks also of the transitioning times that each collegiate student faces in the world around them, and showcases the incredible accomplishments of Lehigh's art department. Our artists and authors have tackled difficult subjects that are defining our changing culture and society, providing new and unique answers to important issues while representing Lehigh's leaders of tomorrow. I hope that these selections will foster conversation and dialogue, inspire action, and most of all, generate appreciation for the impressive work produced by the university's undergraduates.

Alexandra Corell
Editor in Chief

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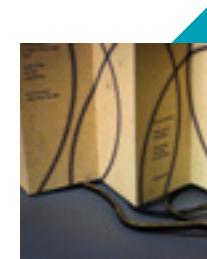
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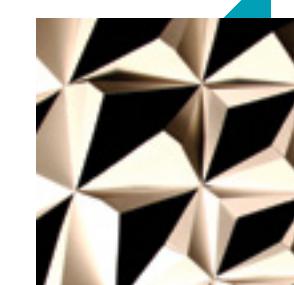


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DUBAI: THE SPECTACLE OF FLOWS

Abstract Over the past few decades, Dubai has developed into a major global city by using spectacular, iconic architecture to attract flows of capital, people, and ideas. Because of this, Dubai has had a rapid and unique urban development. The skyline is now made up of skyscrapers and luxury resorts, many of which have radical designs, and the area of the city has been increased through the construction of artificial islands off of the coast, a dramatic contrast to the barren, desert landscape just a few decades ago. A city based on superlatives, Dubai provides a unique and interesting urban model which is explored in this paper.

INTRODUCTION: GROWTH OF A GLOBAL CENTER For the past few decades, Dubai, a seaport in the United Arab Emirates, has been developing into a major global city. During the 20th century, oil was discovered off the coast and Dubai profited from the oil trade revenues as it became a major trade center in the Middle East. The oil trade significantly contributed to the growth of the city until the 1990's when the leaders began pushing to develop the spectacle that is contemporary Dubai. Dubai dramatically transformed between 1991 and 2005, just fourteen years, which can be attributed to

its rapid evolution. Dubai, obsessed with spectacular expansion, continues to grow with unprecedented speed.

Without a doubt, the world is amazed and intrigued by the spectacle of Dubai. The need for Dubai to have the biggest, tallest, and most extreme everything has created an attraction based on superlatives and extravagance. This attraction is a catalyst for increased flow of trade, tourism, labor, communications, and information, all of which have furthered the accelerated development of Dubai. Ultimately, the radical urban projects and spectacles of

Dubai have created an allure which has attracted flows of capital, people, and ideas from nations across the globe.



Figure 1: A street in Dubai in 1991 compared to the same street in Dubai in 2005. In the image on the right, the street has transformed into a highway, and the rapid development of the city is clear.

DUBAI'S UNIQUE URBANISM

Contrasting to cities of the past that were separated from each other, presently major cities are interconnected and part of a world system. This is due in large part to the rapidly changing contemporary world through the development of technology and innovation. Due to technological advances, boundaries between countries barely exist. Travel, trade, and communication are easy and expeditious, sometimes almost instant, because of the disintegration of boundaries. Now, people travel and move all over the world quickly with transportation luxuries like cars and airplanes, and the media can connect the global with local using technologies such as television and the internet. Similarly, both technology and ideas spread across the globe rapidly, and money crosses borders at lightning speeds. Global flows affect the urban environment by challenging locality and present opportunities through the access to

global capital and knowledge.

Unlike most contemporary cities, rather than developing as a result of the flows of



capital, people, and ideas, Dubai has been developed in order to attract these flows. By the mid 1990's the oil industry was booming, and oil exports had peaked at 400,000 barrels a day.¹ The four sons of the former Vice President and Prime Minister of the United Arab Emirates recognized a need to diversify Dubai's economy and reduce its dependence on oil. They based Dubai's new economy on trade and merchant immigration. Mohammed bin Rashid Al Maktoum, one of the brothers, expanded the "free zone" policies with the support of his brother, Maktum, the ruler of Dubai. Many European and North American companies took advantage of Jebel Ali Free Zone, and Dubai became the Middle Eastern Hub for major economic players across the globe.²

While Dubai has been able to successfully develop a global image in a short period of time, the strategy of its urban development is fragmented. Currently, the city is composed of disconnected

centers, which are only accessible using cars, since they are separated by ten lane highways. This hinders the pedestrian traffic through the city and prohibits a wide sense of community. Dubai is the epitome of "splintering urbanism" as coined by geographers Stephen Graham and Simon Marvin. Its infrastructures, including networks and information and communication technologies, fragment the experience of the city. At the same time, all of the networks rely on each other to function. The infrastructure systems contribute the growth of the city, both socially and physically, and attract international capital.³

Certainly, the sheer speed at which expansion has occurred in Dubai is a unique characteristic of the city's development. In 1950, Dubai took up less than one square mile. By 2005, it had expanded to nearly fifty-five square miles, rivaling the size of other major cities across the globe.⁴ Although it may have grown rapidly in physical size, Dubai's population has not grown to the same level. Most world cities have a population of anywhere from four to twelve million; however, Dubai's current population is only 2.3 million.⁵ The discrepancy between size and population is concerning, since this indicates that Dubai is both unbalanced and dependent upon tourists to fill a large part of the city. Equally important, the lack of population leads to many unoccupied areas in the city, which, at times, makes some areas feel deserted.

Another unique characteristic of Dubai's urbanism is the fact that it was built in the

middle of the desert. Because of this, there are large areas of sand that surround and are

DUBAI IS THE EPITOME OF "SPLINTERING URBANISM" AS COINED BY GEOGRAPHERS STEPHEN GRAHAM AND SIMON MARVIN.

dominating principle in Deira. There are many winding roads and alleyways in every section of the city. Throughout, there are awkward areas that seem to be left over after development, mere afterthoughts. Specifically, there are many open areas on the right portion of the figure and ground. This shows that the city was developed as a seaport, from the water towards the land with no real plan. (Note that the gulf is to the west of Deira). Despite the disjointedness of the

fashion, tourism is based on luxury and lavishness. Established in 1997, Jumeirah International Group introduced the trend of spectacular, iconic architecture in Dubai. The use of iconic architecture is a global strategy to "enhance the appeal of the city" and attract investors, tourist, visitors, and therefore, capital.⁷ One of the first iconic resorts built was Burj Al Arab (figure 3). With fifty-six stories and at 1,053 feet, this luxury five star hotel was the tallest hotel in

Dubai, Deira, 2014
figure-ground analysis



Figure 2: 2014 figure and ground analysis of Deira, Dubai courtesy of the Urban Research Lab.

city, ultimately, Dubai has been able to successfully grow its global image, and it has done so rapidly, uniquely and in the absence of a formal framework or urban development plan.

TOURISM AND THE INCEPTION OF ICONIC ARCHITECTURE IN DUBAI
Tourism has become a central component to Dubai and its economy. In typical Dubai

the world at the completion of its construction in 1999 and is the third tallest hotel in the world currently. The hotel was designed to mimic the shape of a sail of a dhow, an Arabian vessel. Unsurprisingly, there is an alluring feeling about Burj Al Arab. Most notably, it is built upon an artificial island that is 920 feet out to sea. The seeming inaccessibility creates the allure almost entirely on its own, and the self-



Figure 3: Burj Al Arab, the seven star hotel in Dubai. The building declares itself a spectacle due to its separation from the main land and alluring form.

proclaimed seven-star luxury is appealing to world travelers.

The spectacular Burj Al Arab made itself into the symbol of Dubai for a period of time after it opened in December, 1999 due to the success of the emergence of its iconic architecture. Burj Al Arab is intentionally extravagant and excessive, and everyone loved the spectacular theme. Its image was used widely in advertisements to attract tourists, and this tactic was lucrative.⁸ In the late 1990's, the emphasis on luxury travel was so strong that it was estimated that ten percent of Dubai's GDP was spent on tourism.⁹ The construction of spectacular

resorts such as Burj Al Arab contributed to the incredible growth of tourism to the city. By 2012, almost ten million tourists were traveling to Dubai and staying in one of the hundreds of hotels, of which several have five stars.¹⁰ According to the Department of Tourism and Commerce Marketing, in 2011, "Dubai's hotels recorded a ten percent increase in the number of tourists."¹¹ Because of the success of increased global flows due to the iconic architecture, project

proposals in Dubai continue, each more radical and spectacular than the last. The spectacle of the high end hotels and resorts, which began due to the success of Burj Al Arab, has significantly strengthened the overall allure of and growth in tourism to, and consequently the expansion of Dubai.

Since the opening of Burj Al Arab, many lavish hotels and resorts have been constructed in Dubai, using spectacle and

DUBAI WANTED TO PROVE THAT IT COULD DO WHAT HAD NOT BEEN DONE IN THE PAST BY PUSHING ENGINEERING TO THE EXTREME.

1,539 rooms, twenty-one restaurants, a waterpark, 65,000 marine animals, a shark lagoon, and one of the most sophisticated dolphin bays in the world.¹² Consistent with Burj Al Arab, Atlantis, The Palm declares itself "iconic" and attracts visitors by dazzling them with splendor.¹³ Dubai's need and appreciation for exhibitionism is apparent in Atlantis, The Palm, with its brag worthy list of world class features and activities.

Another resort, Ski Dubai (Figure 5), Dubai's indoor ski resort, is nothing less than ostentatious. In the heart of the desert, Dubai managed to create and sustain a 242,190 square foot ski resort, complete with real snow. This remarkable resort maintains a temperature of thirty-four to thirty-six degrees



Figure 5: Ski Dubai in the Mall of the Emirates.

iconic architecture as a guide. Many of these resorts have been built in the same area as Burj Al Arab, including Jumeirah Beach Hotel, with its wavelike form; Royal Mirage, which flaunts an Arabian theme; and Atlantis, The Palm, notably one of the most extravagant resorts. Atlantis, The Palm (figure 4), like Burj Al Arab, is a five star hotel and parallels the stylistic themes of the Atlantis resort in the Bahamas. It is located on Palm Jumeirah, one of Dubai's manmade islands, and has

Fahrenheit for perfect skiing conditions and a refuge from the desert heat.¹⁴ Ski Dubai proves that Dubai strives to accomplish anything to be considered the best travel destination in the world.

Ostensibly, many of Dubai's resorts were built around the premise of extravagance and luxury to appeal to high class travelers. Every resort is decorated with chic furnishings, capturing "panache and style," and details

are highly regarded.¹⁵ Undoubtedly, luxury resorts continue to entice travelers to visit Dubai to be treated like royalty. Everything that is part of the hotels and resorts must be the best, giving Dubai's hospitality sector little competition from around the world.

REAL ESTATE: RECLAIMED LAND

To further attract investment, a real estate sector was established in the late 1990's. The construction of Palm Islands had a huge impact on real estate. The Palm Islands consist of three artificial islands, Palm Jumeirah, Palm Jebel Ali, and Palm Deira. Palm Deira, the largest of the three palms, is seven and a half times larger than Palm Jumeirah (Figure 6) and five times larger than Palm Jebel Ali. Each island resembles a palm tree and has residential, leisure, and entertainment centers built upon it. Construction of the first two palms began in 2001, and by 2004, they were both sold out.¹⁶ Because of their success, the third Palm Island and the World Archipelago were constructed, creating more space for real estate projects.

The development of the real estate sector attracted the interest of many wealthy investors. As a result, the demand for real estate projects dramatically increased, and Dubai continued to launch projects. By attracting people, the construction of spectacular real estate architecture has dramatically increased the population. Fifty years ago, Dubai was home to only 30,000 people. Now, due to the attraction of Dubai's spectacles, more than 2.3 million people

inhabit the city.¹⁷ This increase means that many foreigners occupy the city, allowing for global outreach and high-profile investments. Evidently, the construction of spectacular real estate, particularly Palm Islands, has attracted global investors and stimulated development of Dubai.

While the size of the three palms varies, the general appearance and structure is



Figure 4: Atlantis, The Palm, one of Dubai's most luxurious resorts located on Palm Jumeirah.

the same, and the same state of the art engineering procedure was employed for the construction of The Palm Islands and The World. The islands were constructed using all natural materials, unlike previous manmade islands which used concrete and steel for structural stability.¹⁸ Dubai wanted to prove that it could do what had not been

done in the past by pushing engineering to the extreme. The biggest challenge was developing reclaimed land that would stay in place without any structural materials. Another challenge was finding suitable sand for the project. While Dubai has a plethora of sand available in the surrounding desert, this sand was too fine to be used in the construction. The ideal, coarse, dense sand used for the projects was acquired from the bottom of the Persian Gulf. In order to

construct the islands, sand was sprayed by dredging ships, which used Differential Global Positioning Systems to guide sand placement within .39 of an inch of desired boundaries. After the placement of the sand, vibration compaction technologies were used to compact the sand to ensure that the manmade masses did not settle over time.¹⁹ Dubai's goal of constructing engineering-intensive projects on a strictly short schedule had been achieved.

Reclaiming land by constructing massive manmade islands is another facet of Dubai's extravagance and excess. The staggering cost of the projects was not an issue for Dubai, which wanted to enhance its real estate sector and attract high end buyers. The islands have done just that and promote the dreamlike atmosphere of contemporary Dubai. Certainly, the construction of The Palms and The World proves that Dubai is capable of breaking boundaries and developing complicated engineering projects that contribute to its utopian culture.

UNFORESEEN DEBT CRISIS

By 2008, it seemed as though the diversification efforts of the sons of the late Vice President and Prime Minister had succeeded. Rather than being the main source of capital flow, oil only made up five percent of Dubai's GDP. Additionally, the three billion dollars in annual foreign direct investment supported the ranking of Dubai's economy as the seventeenth most attractive city for foreign investment.²⁰ At this time,

Dubai was buzzing with activity, and the future seemed bright for the gulf city.

While the rest of the world economy was suffering from the credit crunch, as of September 2008, Dubai seemed to be immune to the economic turmoil. Projects were continually being proposed, parties were constantly being held, and hotel rates were consistently increasing. In truth, Dubai's spectacles were only hiding economic issues, and they could do so only for a limited amount of time. Behind the curtain, foreign investors were losing interest; tourists were finding cheaper vacation destinations; and the banks were having difficulty finding credit on the free market, so owners started selling properties. Naturally, people were losing confidence in Dubai, which ultimately caused Dubai's stock market to crash.

In only a few short months, Dubai's economy changed from one of stability and promise to one left in shambles. By the end of 2008, many projects were left incomplete due to the massive eighty million dollars in debt Dubai had accumulated.²¹ The economic downfall meant that Dubai, a city previously surrounded by extreme wealth, was bankrupt by late February of 2009. Facing probable economic meltdown, Dubai received aid from Abu Dhabi, which enabled it to start to rebuild its economy.

BURJ KHALIFA: AN OSTENTATIOUS SUPERLATIVE

Prior to the economic turmoil, tourists and investors from all over the world were

confident in the spectacular development of Dubai, and the flows of people and capital continued. In typical Dubai fashion of pursuit of power and ambition, in the early 2000's, Emaar Properties proposed the construction of Burj Khalifa (Figure 8), the tallest man-made structure in the world. Construction for the impressive, half mile



Figure 6: Palm Jumeirah, one of the three Palm Islands off the coast of mainland Dubai. The island has been developed to host residents and travelers alike.



Figure 7: Dredging ship spraying sand to construct The Palm Islands.

high skyscraper began in 2004. The blurred boundaries of the world meant that there was global collaboration on the project. For example, the SOM office in Chicago

designed the building; while the Engineering and Construction Group of Samsung C&T Corporation, located in Seoul, South Korea, was the main contractor; and Turner

Construction, headquartered in New York, did the construction management on the project. Because of global flows, Dubai did not have to carry out the project on its own. The overall development of Dubai drew continuous attention from the entire world, and Dubai was able to globally publicize the plan for the construction of Burj Khalifa.

Following the bailout, Burj Khalifa opened on January 4, 2009. A "superlative in every respect," Burj Khalifa is the centerpiece of the city and brings a new glow to Dubai as the hub for tourism, dining, and entertainment.²² At 2,722 feet tall and 163 stories, Burj Khalifa currently holds many world records including tallest building in the world, tallest free-standing structure in the world, highest occupied story in the world, and highest observation deck in the world. Burj Khalifa surpasses the height of all other buildings in Dubai by far, a bold and extreme decision that exaggerates the spectacle surrounding it. Its height slices the skyline, defining it as the center of luxury. Burj Khalifa contains an extravagant Armani hotel, indulgent condominiums, increasingly popular observation decks on floors 124 and 148, and boutique offices. Because it is radical and spectacular, Burj Khalifa has

drawn attention back to Dubai. The city is experiencing an increase in capital flows, allowing it to heal and pursue fantastic projects.

Undeniably, Burj Khalifa's extreme height is both captivating and remarkable. The last tallest building in the Middle East before Burj Khalifa was the Great Pyramid

FOR NOW, IT SEEMS AS THOUGH THERE IS NOTHING THAT CAN IMPEDE DUBAI'S RAPID GROWTH INTO LAVISH EXCELLENCE.

room.²⁴ Burj Khalifa is the manifestation of the ideologies of contemporary Dubai; it is elegant, striking, phantasmagorical, and shrouded in vanity and superlatives.

CONCLUSION

Dubai is a city developed upon spectacles. These spectacles have been built in order to attract people and commerce. The attraction has led to the establishment of global flows into and out of the city. Interestingly, this is the reverse of typical urban development. Generally, cities are formed due to the flows of people, commerce, and knowledge, rather than the development of city attracting the flows. For Dubai, this urban strategy has been mostly successful. Just a few decades ago, Dubai was an inactive player in the global economy and had a barren urban landscape. Now, Dubai has become a top global city filled with luxury and iconic architecture and development. Despite its successful development into a megacity, Dubai's urbanism is fragmented. Its spontaneous development has left holes in the urban footprint. The disconnected urban centers suggest that the city was built with no strategy for urban framework. Although Dubai's infrastructure systems are disjointed, they still contribute to development and attract global capital.

Tourism and construction are increasing rapidly, and people across the globe have the desire to visit or live in Dubai in order to experience the high end lifestyle of the city. Indubitably, this desire is precipitated by the spectacles and superlatives of the culture

that has been developed over the last thirty years in Dubai. The hotels and resorts are beyond lavish, tempting world travelers to stay the night, regardless of the cost. The Palm Islands and The World archipelago now dominate Dubai's landscape while providing top of the line real estate properties. Furthermore, Burj Khalifa, with its staggering height and graceful silhouette is the epitome of the superlatives upon which Dubai has been built. Conclusively, the radical, spectacular projects that have been executed in Dubai have stimulated global flows that



Figure 8: As the tallest building in the world, Burj Khalifa towers above all other buildings in Dubai, creating a dramatic skyline.

have brought people and commerce into the urban landscape, which has allowed Dubai to become a top global city. Spectacular, utopian projects will continue in Dubai and contribute to the overall vanity and extravagant ideology of the city. For now, it seems as though there is nothing that can impede Dubai's rapid growth into lavish excellence. □

DRAWING & PAINTING

TOOLS

Zhenya Li

My brother locked me in the garage
for fun and I found these tools.



UNTITLED

Yiyi Chen

This piece was painted for an independent
painting class. The medium I chose was
acrylic colors and ink.

UNTITLED

Erin Lidl

This piece was created for an art capstone with Professor Berrisford Boothe. My aim for this work was to explore dimensionality and play with form using neutral tones. The medium is acrylic and ink on paper.



APPLES TO APPLES

Savannah Boylan

This piece was made as a part of a series to study the playfulness of food. Often we breeze through the task of eating and forget the fun, vibrant, and enjoyable act of eating. Instead, we should take time to enjoy the simplistic act of watching a full apple vanish before our eyes.



UNTITLED

Jaclyn Sands

I created this piece for Painting I with Professor Berrisford Boothe in Fall 2014. The assignment was to create a “master copy” of a piece by a well established artist that included a human figure. As the second assignment in an introductory painting class, this project served to acclimate students to the techniques of painting realistic figuration while alleviating anxieties about finding subject matter. I chose to emulate a cropped portion of a piece by painter Lacey McKinney called Void; because I enjoyed the graphic quality of the fully rendered woman against the stark background, the slightly abstracted use of paint, and the ambiguous nature of the subject matter.

UNTITLED

Nina Miotto

This piece was my second to last assignment in Painting I. It was done in an impasto manner (applying oil paint thickly) using only my palette knife and a still life as reference. The point of this assignment was to make quick decisions based on structure and color.



UNTITLED

Jaclyn Sands

This piece was part of a series I created for Special Topics in Studio Practice, an independent study course I took in Spring 2014 with Professor Berrisford Boothe. It is a contour line drawing, which means that the lines on the woman's body indicate changes in value much in the same way that the contour lines on a topographic map indicate changes in elevation. In this way, I create a map for myself which details the shading of the subject.



SOLO
Sathya Ram

THE NBA & LEBRON JAMES:

an analysis of the relationship between media representations and american society

Abstract: Hip Hop Culture and Basketball are two social spaces that provide a mainstream framework of how race and class are depicted in American society. While these spaces are often critiqued for creating a monolithic understanding of these social dynamics, we explore the systematic forces that potentially influence the representation of these cultures in media. How do the economic forces that result from the structure of the music and professional sports industry lead to the mainstream representation of the hip-hop artist and athlete? How is popular culture created and distributed to the masses in these industries to both perpetuate social dynamics in society and act platforms of agency and change? And finally, what are the dynamics of the micro-level interactions that make society resonate with these subcultures in nuanced ways? I analyze the NBA's representation of LeBron James and selective use of hip-hop culture, through artists like Kendrick Lamar and Kanye West, to understand how they relate to the popular understanding of race and class dynamics in mainstream America. My literature details the current state of research on the intersection of economics, sociology, and media studies regarding the music and sports industries.

In the era of new media, the impact of popular culture has become pervasive in the lives of consumers. Individuals have become increasingly reliant on mainstream media outlets to contextualize their social experience in an increasingly globalized world. As consumers try to comprehend where their own identity

stands in the environment of which we are a part, mainstream media creates a common space of understanding through representations that reflect mainstream values and consciousness. As a result, the representations of race in mainstream media are extremely powerful in reflecting and changing attitudes towards race in society.

In the past fifteen years, the National Basketball Association, the premier professional basketball league, has capitalized on the technological developments of the 21st century. Former Commissioner David Stern made a concerted effort to bring the game of basketball to an international level. The effects of such efforts are very visible today: The NBA is the most international professional sports league in America and has been very prevalent in supporting basketball overseas in countries like China, France, the U.K., Canada, and many more. As a result, the league's representation of American society has powerful, global effects on societies that use media to understand the realities of places of which they are not directly a part. Additionally, with the rise of hip-hop in the American music industry, the NBA has recognized the interconnected nature of hip-hop and basketball culture and has leveraged it in the past years to further commercialize the sport.

This paper is concerned with the effects of mainstream depictions of black male celebrities in the hip-hop and basketball industry and the sociological and economic causes of those media depictions. I will explore these effects through an analysis of the NBA's depiction of superstar LeBron James, and its use of highly acclaimed hip-hop artist Kendrick Lamar leading up to the beginning of the 2014-2015 season. The NBA's mediation of its most popular player and selective use of hip-hop culture are deliberate marketing ploys to appeal to

mainstream American society and increase revenue by expanding its audience. I will contextualize these representations with the history of the basketball and hip-hop industry to provide a greater understanding of how media representations in these spaces are interconnected with racial dynamics in mainstream society.

POPULAR CULTURE, NEW MEDIA, AND SOCIETY

Popular culture is a widely explored subfield of sociology and other disciplines because of its ability to provide macro-level information across the masses of society. Most cultural sociologists derive their work from Mukerji and Schudson's definition of popular culture: "the beliefs and practices, and the object through which they are organized, that are widely shared among a population".¹ This definition has been widely accepted because it is inclusive of the two main focuses of popular culture research, consumption and creation of popular culture.²

As a result of the industrialization and commercialization of culture in all forms throughout the 20th and 21st century, many cultural sociologists have concluded that there is an overall homogenization of popular culture because the importance of traditional means to "learn" culture have become less important. Developments in telecommunications have allowed for the homogenization of culture across political and cultural borders in ways that were not possible before. Analyses of this phenomenon through the lens of

mass culture theory have become quite binary and politicized due to its origins in studies of "mass society" in regards to social movements and political regimes like Nazi Germany. Some assert that this homogenization is a natural process of market forces while others believe that the monopolistic forces created by the industrialization of popular culture gives the masses no real reason and option to consume other cultural artifacts.³ These perspectives are considered "polarized and incomplete" and have led to the emergence of the "production-of-culture" perspective in popular culture studies.⁴ This branch of scholarship is concerned with the processes and institutions that "produce" popular culture, such as news reporting, talk shows, popular music, literature, and much more.⁵ Scholars maintain a level of "apolitical scholarship" by focusing on understanding these processes rather than ascribing politicized models of these industries.⁶

The development of New Media has added another level of interaction between society and popular culture. As individuals increasingly have the power to create content and be a part of the production of mainstream media, the production of culture analysis of popular culture becomes incomplete; we cannot solely look at the industries that are responsible for producing culture but also how consumers interact and respond to these media representations. According to Kitwana, this is because of how media and entertainment have become major forces in transmitting culture from generation

to generation.⁷ The human manifestations of popular culture, celebrities, therefore have a huge impact on the culture of youth. Children, in particular, often are in parasocial relationships with characters that they see on television.⁸

Historically, popular culture studies have particularly drawn upon economic analysis to understand its model of production and consumption in America. However, DiMaggio criticizes these economic analyses because they are "unable to empirically analyze the complex processes of popular culture industries."⁹ assert that economic analyses are more concerned with theoretical models that are too idealized to explain social phenomena. To address this, popular culture scholars have increasingly drawn upon both sociological and economic perspectives to better understand the relationship between media and consumers.

Current "production of culture" studies have been heavily macro in nature. However, Grindstaff, following the conclusions of Crane, calls for more micro-level research because of how popular culture can give meaning to other objects within an individual's society.¹⁰ Gray's research on the relationship of television on representations of race shows how these industries of popular culture can provide representations and paradigms for identity formation for the masses.¹¹ These studies would provide a better way to compare the smaller markets to the mass-mediated markets and address the differences in markets and business structure. This also

falls in line with the trend in this field towards economic sociology.

SPORTS MARKETING AND AMERICAN SOCIETY

Sports have become a dominant aspect of modern American culture in the various ways they are a part of our social experience.¹² The ways sports have historically been used to establish solidarity in artificially created

THE RELATIONSHIP BETWEEN CELEBRITIES AND THEIR FANS HAS BECOME SO POWERFUL BECAUSE OF A CAPITALIST CONVERGENCE OF CULTURE INDUSTRIES.

that have complex business practices. Most sports consumers never are in direct contact with any of the athletes, which means these media platforms are the main lens through which they contextualize what happens in these spaces to their everyday lives.

As a result, media has taken a larger role in this sports economy. This is extremely visible in how athletes have become celebrity figures in American society: The relationship between celebrities and their fans has become so powerful because of a capitalist convergence of culture industries. This is "a result from the implosion of the boundaries between the cultural, economic, political, and technological sectors in the sports economy".¹⁴ Professional sports have developed into big businesses that act as corporations with clear economic goals, and a major way this has been achieved is by leveraging the parasocial relationships that fans have with these celebrity figures.¹⁵

The most visible sports celebrity that has influenced these different spaces is Michael Jordan, who has been deconstructed because the way he is marketed to American society is a deliberate construction by advertisers to sell not only Jordan's image to the masses, but to appeal to audience's values and ideologies to create a sense of devotion to the athlete.¹⁶

THE NATIONAL BASKETBALL ASSOCIATION, RACE, AND MEDIA REPRESENTATIONS

The NBA is the premier basketball league worldwide and dominates the international

basketball industry. It has managed to integrate technological developments seamlessly compared to other sports leagues. The NBA has major national mainstream television partners, a hand in the music industry, and even a steady relationship with men's lifestyle magazine GQ. These economic relationships put the NBA in a position where they can truly control how their image is produced and distributed through the media, thereby controlling society's discourse on them.¹⁷ Furthermore, the NBA is able to leverage its connections and power to control the images of these sports celebrities like Michael Jordan, Kobe Bryant, and LeBron James, so that they are lucrative sources of revenue for the league.

Promoters and advertisers carefully craft the representations of the league's best athletes so that they are "safe" for consumption by the masses, partly through the American Dream narrative: That many of the NBA's stars faced insurmountable socioeconomic and racial barriers to achieve what they have today is a very popular storyline used to create empathy and parasocial contact between fans and players.¹⁸

As basketball became commercialized and popularized in America through the NBA in the 1980s, it created a unique, shared cultural experience for consumers from around the globe regarding race. Representations of athletes on national television exposed communities to a racially dynamic space that was not often seen in media during the NBA's development.¹⁹ For

example, the Larry Bird/Magic Johnson era in the NBA was constantly represented as a racial and cultural dichotomy, creating a rivalry that extended beyond support of their respective teams. This drew many fans to the league during a time when basketball was deemed unpopular and boring by mainstream America. However, as the league became popularized in mainstream America, it became clear that white

and achieve the American Dream. When David Stern (1984-2013) became the commissioner of the league in 1984, he sought to expand the league to a global audience. At the time, the league was considered "too black" to be marketed for mainstream America and was painted as a league filled with thugs. Stern pursued his agenda to bring the NBA into mainstream American culture quite aggressively, leading to the relocation of six NBA teams, the creation of seven new teams, and the creation of the NBA Dress Code in his tenure.²¹ While Stern's commitment to this vision has certainly helped the league grow into the economic powerhouse it is today, he is often critiqued for his authoritarian-like control over the actions of teams and players, often in racially coded ways. By issuing harsh penalties for actions and behavior that were not in-line with the image and reputation that he was attempting to achieve, Stern effectively policed the league into conforming to what was palatable for mainstream American society. Davis analyzes these policies and argues that age-minimums for American players, dress codes, and strict financial penalties for unruly behavior were enforced in order to help players become the foundation for commercial success.

These decisions in the NBA are paralleled with the league's relationship with hip-hop culture during Stern's time in office. In the 90s, hip-hop arose as a counterculture of underprivileged black youth to mainstream

society. The NBA and hip-hop were the two main spaces in which black celebrity figures were normalized and portrayed in the media. This relationship was viewed negatively by mainstream America, and Stern's policies fell in-line with the commercialization of hip-hop culture by the music industry to make these spaces more palatable for mainstream American society. Now both the basketball and hip-hop industries have become extremely powerful institutions that create influential depictions of black males and the racial attitudes of American society.

These representations of black males undoubtedly have a huge impact on black youth in American society. Because of the pervasive nature of new media and the way that the youth are growing increasingly dependent on media sources to contextualize their own experiences, celebrity figures have become particularly powerful role models in their lives. This relationship is further amplified by the racial commonalities that are often unaddressed in typical mainstream media. Black males have complex understandings of these celebrity athletes, and often only consider athletes who appear to represent values that the NBA has marketed as "good" to be their role models. Singer and May have looked at the effects of romanticized athlete rags-to-riches stories on black male high school basketball players.²² It is evident that black males disproportionately have the unrealistic expectation that pursuing basketball will lead to a college scholarship and maybe even a professional career. They attribute this to fact

that 75% of players in the NBA and 60% in NCAA D1 Men's Basketball teams are black males, which provides a common source of romanticized role models for underprivileged black males. Furthermore, their ethnography of Cerico, a 21-year-old black male high school graduate, reveals that the lack of legitimate educational opportunities and methods to attain the cultural capital of more privileged members of society makes basketball a very appealing path to socioeconomic success despite extremely unfavorable odds. This perspective is in line with the social reproduction perspective that the culture of poverty is self-perpetuating. Dubrow and Adams also find that the popularized image of this narrative is in fact a myth: Most NBA players come from relatively advantaged backgrounds and it is more difficult to make it to the league if the player is black and comes from a lower socioeconomic background.²³

The NBA has become such a prevalent media presence in American society that consumers have developed a parasocial relationship with teams and players. This has become a driving economic force in generating revenue for the entire basketball industry and has also strengthened the effects of media representations of the league.

ANALYSIS OF REPRESENTATIONS OF LEBRON JAMES AND KENDRICK LAMAR IN THE NBA LEBRON JAMES & KENDRICK LAMAR

In 2014, LeBron is arguably the most

well-known athlete in the world. He is a two-time NBA champion, four-time league MVP, two-time Finals MVP, Olympic gold medalist, and currently the best basketball player in the world. His net worth is \$270 million and earns \$70 million a year in salary and endorsements. He has transcended the game of basketball and has become a businessman, father, actor, entertainment producer, and media icon, giving him the social capital to influence various social spaces. While James is not nearly as well-known as Michael Jordan and his legacy, he is unique in that he started his basketball career at the height of developments in new media technologies like Facebook, Twitter, YouTube, and other platforms. Consequentially, he has been subject to relentless scrutiny from the media and sports fans; his image is carefully crafted and reconstructed by journalists, media personalities, and his own PR team because of the visibility of every single thing he does. His narrative in the NBA has been extremely mediated given the impact that he has on mainstream American culture.²⁴

Compton-based hip-hop artist Kendrick Lamar is currently considered to be the most talented rapper in the industry and one of the most visible figures in the hip-hop industry. His work is considered to be a break away from the mainstream, commercialized hip-hop that often depicts a very monolithic representation of hip-hop culture. Despite the conscious nature of Lamar's work, he has gained widespread, mainstream success. He has won and been nominated for

numerous awards in the entertainment industry, including seven Grammy nominations in 2013.

Similar to LeBron James's appeal, Kendrick's mainstream appeal is partly caused by his ability to walk the fine line between many social spaces. As a native of Compton, California, Lamar was very immersed in the world of hip-hop as it was popularized in the 90s, validating his "authenticity" as a true hip-hop artist, appealing to the hip-hop world. Additionally, his lyrical content qualifies him as a conscious hip-hop artist, which is a subgenre of hip-hop that often draws a racially diverse fan-base because of its discussion of social issues. The combination of these two factors and his sheer artistic talent creates an image of an artist who is not stereotypically "hip-hop" enough to alienate mainstream audiences, but also "authentic" to garner the respect of other hip-hop artists and the hip-hop community. In recent months, Lamar has become extremely visible in mainstream media, as his latest single "i" has been used in marketing campaigns in various industries, most notably in the NBA. Kendrick Lamar is hugely tied to many subcultures, and as a hip-hop artist who often addresses his experience as a black male in his music, provides context for the black male experience in America to these various spaces.²⁵

Both James and Lamar are two celebrities whose narratives represent the American Dream. James was raised by

his single-mother who was 16 years old at the time of his birth. They lived in the ghettos of Akron until LeBron moved in with his pee-wee football league coach Frank Walker and his family at the age of nine. Through this good fortune and his mother's sacrifices and hard work, he was able to rise out of his circumstance when he became the number one draft pick in 2003. Lamar also had to face difficult conditions in his youth, as he was exposed to gang activity in Compton, California in the 90s. Instead of being immersed in gang culture, Lamar was a good student who enjoyed writing in the classroom. His classroom success and consistent effort manifested in his first mixtape (a compilation of independently produced songs), which landed him a record deal at a young age. This record deal set the stage for his commercial success a few years down. These narratives have contributed to the level of popularity that these two celebrities have had in mainstream America.

THE NBA AND LEBRON JAMES' STYLE EVOLUTION

Former Commissioner David Stern recognized the economic power of celebrity athletes in their league when the Bird/Magic rivalry led to a resurgence in popularity in mainstream America and Michael Jordan (who was drafted the year Stern became the Commissioner) created a business empire around his own identity. Committed to his vision of an NBA accepted by mainstream America, Stern controlled the image of the league and effectively turned the NBA into

a transnational corporation by leveraging the popularity of the most talented players, creating corporate relationships, and making sure that the league was as tech- and media-savvy as possible. Stern leveraged James's popularity throughout his career to fight the ongoing concern that the NBA was not palatable to mainstream society, particularly after the media backlash of the infamous Malice in the Palace, a brawl between The Detroit Pistons, Indiana Pacers, and spectators in a 2004 NBA game. Stern's agenda had clear racial undertones, as evidenced by his dress code that he ratified in 2005, which banned apparel that was associated with hip-hop culture and imagery, including: jerseys, jeans, do-rags, large jewelry, Timberland boots, and sneakers. Critics were not supportive of this policy as they felt that the way it was enforced (penalties included fines and suspensions) targeted black players. The policy effectively enforces a white normativity by policing hip-hop culture's influence on the league and the way it is perceived.²⁶

While the methodology and justification of the policy were controversial, they were more than successful in furthering Stern's direction for the league: Since the policy was instituted, upper-class fashion and style have become entrenched in NBA culture. When comparing the various draft class photos since the 2003 draft (Lebron's draft class), there is a growing trend of players who are dressing more professionally and even fashionably in recent years (see appendix). The men's lifestyle magazine

GQ has capitalized on this trend by building a relationship with the NBA, giving the magazine exclusive access to each draft class for interviews and photo shoots, all while having their stylists work for the lottery picks for each year. This shift in the NBA's image is undeniable and a deliberate part of Stern's tenure.

James's image changed as a part of this trend: While he is seen in his 2003 draft photo donning a oversized, baggy all-white tuxedo that would be ridiculed by stylists and fashion communities, there is no chance that he would wear something like that ever again. He has been featured on the cover of GQ a number of times and is often praised for his style during post-game interviews and other formal events.²⁷ His new style is not extravagant but fashionable, characterized by a sense of class that is a stark contrast to the exaggerated fashions of hip-hop celebrities to represent money and power at the time. This made James significantly more appealing to mainstream America, as he was now being represented in media not only as a basketball player but a celebrity that attends world-class events like high-end fashion shows, soccer games, and awards ceremonies. While fashion is only a part of a celebrity's image, it is a considerably powerful one considering the social value that societies place on different clothes. James's transition into his new style was tantamount to the long-term acceptance of the dress code policy by the rest of the league: He made it "cool" for NBA players to accept standards of style that

many black players were unaccustomed to because of their social position prior to being professional athletes.

James's style transformation represents an inevitable change that he underwent as he became a global sensation. In order to truly be a member of the upper echelons of American society, an individual must have more than just wealth; they must be familiar with the social practices and norms of that

with more disposable income and power in American society through their policies and use of media.

KANYE, KENDRICK, AND CHANGING ATTITUDES IN HIP-HOP

During this time, the hip-hop industry was undergoing a similar transformation: While gansta rap was the root of hip-hop's commercial success in mainstream America, it handled issues of race and class in a way that was uncomfortable and intimidating for mainstream American society. The music industry was not at all concerned with the way that gansta rap was interpreted by society because the sales spoke for themselves. Enter Kanye West, a hip-hop artist whose style completely changed the direction of mainstream hip-hop with the release of his debut album, "College Dropout," in 2004. The album wrestled with themes of self-consciousness, American society and values, education, family, consumerism, and personal struggles, a complete departure from the often violent and gang-related themes of mainstream hip-hop at the time. Critical acclaim was widespread, often citing how West was able to appeal and relate to various social spaces by sticking to his identity as a "middle-class, politically conscious, post-thug, bourgeois rapper."²⁸ West's success forged the path for hip-hop artists to be commercially viable while be conscious hip-hop artists. Lamar was one of those artists.

In 2013, West went on his first solo tour in five years and enlisted the help of Lamar

STERN CONTROLLED THE IMAGE OF THE LEAGUE AND EFFECTIVELY TURNED THE NBA INTO A TRANSNATIONAL CORPORATION.

to be his supporting act for the majority of the shows. During this time, Lamar was seen as one of the best artists in hip-hop, for similar reasons that West was celebrated for during the early stages of his public career. While he has seen immense commercial and critical success, Lamar tackles themes that are on par with the weight and depth of West's works, challenging listeners to be a part of experiences and conversations that are difficult to have with mainstream American society. The NBA has been extremely cognizant of the interrelatedness of hip-hop and basketball culture and has used hip-hop culture in selective ways to market itself. Artists like West and Lamar are extremely compatible with this agenda because of their mainstream appeal and hip-hop authenticity.

LEBRON'S RETURN AND THE NBA'S RACIAL DYNAMICS

The NBA has dealt with the depiction of the racial dynamics in America as best as possible to satisfy mainstream attitudes towards race in America. Twenty years ago, those attitudes were manifested in Stern's dress code policies and strict policing of its players. However, as America has entered a new era of racial politics, the league has had to change its approach. Black celebrity athletes have become extremely normalized and respected in mainstream society with athletes like James, contributing to the post-racial rhetoric that is prevalent in mainstream American media in 2014. These changing racial dynamics were explicitly represented in the response to Donald Sterling's statements

during the 2013-2014 season. An audio recording of Sterling speaking candidly about how he disapproved of his ex-girlfriend posting pictures with Johnson and that he was not in support of black people attending the games of his L.A. Clippers franchise was leaked. There was much backlash by players, coaches, and fans alike, and the league came down swiftly against Sterling in response: Sterling was banned from the

THE NBA CREATED A MEDIA REPRESENTATION OF THE LEAGUE THAT WAS HARD TO IGNORE AND DISLIKE BY MAINSTREAM SOCIETY.

league, forced to sell his franchise, and fined \$2.5 million dollars (the maximum fined allowed by the NBA constitution) by the new commissioner Adam Silver. This response set a new precedent for the NBA, one that was hugely supported by the basketball community and American society as a whole. Despite the harsh punishment and the resolution of the incident, the event left a bad

taste in the mouth of the league, reminding basketball fans that the NBA still has to deal with the overt racist attitudes that were much more prevalent in its earlier days.

During the summer of 2014, LeBron announced that he would be returning to his hometown team, the Cleveland Cavaliers, through a widely publicized letter in *Sports Illustrated*. The letter tries to very hard to relate to the reader mainly by reminding the world that he is more than just a basketball player, and that his life is about more than a sport. Instead of downplaying his experience in his four years in Miami, he compares it to what most people experience when they go to college: "These past four years helped raise me into who I am. I became a better player and a better man. I learned from a franchise that had been where I wanted to go." Throughout the letter, James does his best to contrast his decision to return home to the way things happened in 2010, when he left Cleveland in a spectacle that became a PR nightmare for his brand. Despite this, he never dodges blame; he recognizes that he made a mistake and simply owns up to it. By the end, James shows that he wants to return home in solidarity of his community and fulfill his responsibility as a celebrity athlete to be a leader on-and-off the basketball court.

This decision sent waves across the basketball world and was a moment of redemption for James. He pushes the American Dream narrative to selfless bounds, creating another chapter in a powerful and unique legacy. By the time the

season started, the excitement throughout the league was palpable: Everyone wanted to see James playing on his new team. Up until the first Cleveland home game, the NBA made a huge marketing push to promote the league and James's return. Lamar's feel-good anthem, "i", was a part of this 2014-2015 season tip-off campaign. "i" is a song about the importance of self-love in our society, sending a universally acceptable message to the NBA's global audience that is also in line with how they wanted James's decision to be depicted. Additionally, Lamar performed during the nationally televised half-time show of the Cleveland Cavaliers first home game of the season to celebrate James's return to his hometown team. These highly televised media events drew the attention away from the distasteful incidents of the 2013-2014 season through the selective use of hip-hop culture and the romanticized narrative of superstar James. By creating a campaign that effectively highlighted the way James's decision and Lamar's song reflect popular American values of loyalty, honor, sportsmanship, individuality, and self-respect, the NBA created a media representation of the league that was hard to ignore and dislike by mainstream society.

CONCLUSION

American society has been shaped by our media-centric culture. Individuals and communities place huge value on the "interaction" they have with media representations of their society as they

contextualize their own actions and perspective with that of the rest of the world. However, because of how these representations are often engineered to send specific messages or fulfill financial incentives, their intent and effects must be analyzed to better understand how American culture is influenced by the media and why. These media/society relationships are best understood through industries that are known for creating extremely well-designed and deliberate marketing campaigns and media personalities like the sports industry and music industry.

The NBA's history of dealing with racial dynamics of the mainstream American society allows us to contextualize its policies, operations, and media representations in their overarching goal as a company that is trying to expand its target audience. By aligning the economic goals of an institution such as the NBA and their operations, we can better understand the systematic reasons for the trends in media representations for said institution. Based on this framework, the NBA's facilitation of James's narrative and selective use of hip-hop culture is evidently part of a larger vision to make the NBA more palatable for mainstream American society and a global audience. Prior to the career of James, this agenda manifested quite differently because popular American values have changed since the beginning of Stern's career. Now that the NBA has established its reputation as a progressive, inclusive league that appeals to a broad audience, it can focus on reaffirming

popular American beliefs to further gain popularity and generate revenue under Silver's leadership as the new commissioner. As the NBA enters a new era of racial politics, it will capitalize on the post-racial mystique that has become so pervasive in mainstream media representations of society and popularized in America. The obvious use of the American Dream narrative for James appeals to the values of meritocracy that American society is depicted to have been founded upon. Sports are often a space where the American Dream is realized, justifying the extravagance of the industries as a whole compared to the rest of society.

This analysis of the NBA and its media representations provides a basic framework of the relationship between the economic forces of a mass-mediated market and an industry's operations. By observing the NBA as a corporation, we can better analyze how executive decisions and league-wide marketing tactics relate to the society of which it is a part. Possible extensions of this research can approach the topic through various lenses. A micro-level analysis of actual reactions to certain NBA policies and decisions would give a more nuanced look into how these decisions affect attitudes towards social stratification. Furthermore, the intersection between basketball, hip-hop, and social stratification should be further explored to analyze how these industries affect social inequality in the societies of which they are a part. 

3D & SCULPTURE



FISH
Jaclyn Sands

This piece was created for Three-Dimensional Design with Amy Forsyth in Spring 2015. The assignment was to create a sea creature; it marked my first time working with wood to create a sculptural piece. As such, I decided to go with a very simple fish silhouette design that I knew I could execute well.

UNTITLED
Robert Mason

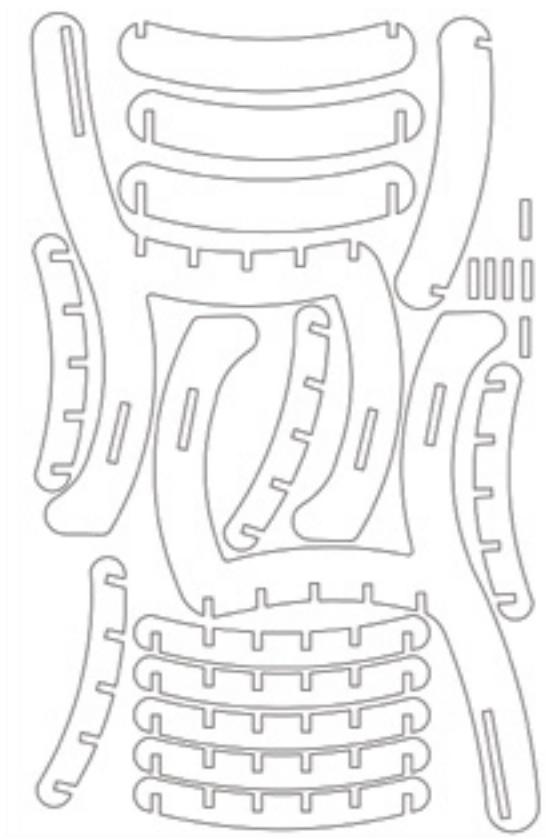
I like trying to up-cycle old or worn, discarded items, especially ones that seem to have some history. This piece was originally a rusted scythe I picked up at a yard sale. I cleaned the blade and painted it then refinished and wood-burned the handle in an attempt to redesign it as a piece of folk art.



FLAT-PACK CHAIR

Elizabeth Phillips

This chair was designed for Product Design 1 and focuses on efficiently using a limited amount of material. The chair was waterjet cut from a 48" x 32" sheet of oriented strand board and can be easily assembled in under two minutes without tools and packs flat to fit in an inch-thick box almost half the size of the original material. Its characteristic curves transform the material by mimicking the curves of the human body when seated to increase comfort while also allowing the individual pieces to 'nest' and maximize the limited amount of material.





BY: MONIKA MARTIN

PLAYBOY: A PORTFOLIO OF ART AND SATIRE, 1919-1924

Abstract This paper explores *Playboy: A Portfolio of Art and Satire*, published from 1919 to 1924, and the role the periodical played in the modern art movement. Published by Egmont Arens at the Washington Square Bookstore, *Playboy* was designed for the politically and artistically radical Bohemian Manhattan in the early twentieth century. Although *Playboy* ended in 1924, the contributing artists were responsible for work that is still discussed nearly one-hundred years after *Playboy*'s first publication. These individuals are now recognized as pioneers of the modern art movement. *Playboy* offers an intimate look at the interconnectivity of the resident artists of Greenwich Village, which is examined in this paper through archival research at the Syracuse University Library Archives. The Syracuse University Library Archives has collected the majority of Arens's personal correspondences that follow the publication of *Playboy* as well as the development of Arens's relationships with prominent Greenwich Village artists. This research was supplemented with scans of the original periodical from the Lehigh University Library Archives.

In the early twentieth-century United States, "little magazines" highlighted experimental literature and art that helped define the modernist art movement. Limited circulation and niche audiences characterized these eclectic magazines. One interesting "little magazine" was *Playboy: A Portfolio of Art and Satire*, an intended

quarterly periodical that ran from 1919 to 1924. The periodical was published in color by Flying Stag Press at 17 West 8th Street, New York by editor Egmont Arens and sold for twenty-five cents per issue. Probably named after the popular play "Playboy of the Western World" written in 1907 by John Millington Synge, and perhaps a

reference to Flying Stag Press's involvement in the Washington Square Players theatre troupe, *Playboy* featured work from artists such as Max Weber, Horace Brodsky, and William Gropper. *Playboy* ran for a total of nine issues, six of which were published in 1919 before a one-year hiatus in 1920. As part of the little magazine movement, *Playboy* exemplified the spirit of Bohemian Manhattan that was contemporary at that time. Full of quirky literature, modern art and leftist satire, the periodical thrived on contributions from primarily unknown modern artists, many of whom grew to become influential individuals in the aftermath of *Playboy*'s run. By publishing his periodical out of the Washington Square Bookstore, editor Egmont Arens developed a creative hub for the artists of Greenwich Village and created a periodical that exemplified the avant-garde spirit.

Printed in January of 1919, the first issue of *Playboy* includes a reprint of an advance announcement that bills the self-described purpose of the periodical as a "record of those who are alive now."¹ The reprint states: "Playboy will always elude the Wise Men... When they would be having him to preach from decorous mountaintops, he will be down by the sea drawing strange pictures in the sand."² Mountaintops evoke a sense of isolation, associating art with exclusivity, an idea Arens viewed as a shortcoming rectified by the modernist art movement. In a rejection letter to a potential contributor, Clare Buzzard, on Jan. 8 1920, Arens reinforced his belief that modern literature

is "more vital than that of the 19th Century because it is establishing again some good healthy roots in the soil of the realities."³ Arens continues this response by sharing his enthusiasm for author D.H. Lawrence, whose work he reviews in *Playboy*'s third issue: "This is a calm acceptance of naked truth as a starting point for art, not as its end."⁴ The inspiration for the periodical's first issue is separately stated in a letter from Arens, writing as the editor of *Playboy*, to one of periodical's anonymous readers on January 6, 1919. Arens suggests *The Nation*, a liberal periodical that started in the late nineteenth century, and the work of Wyndham Lewis, English author and painter, as a complement to *Playboy*'s editorial content.⁵ Although not mentioned in the letter, Arens also seems to have been influenced by *The Masses*, a periodical that ran from 1911 to 1917.

Through his membership in the Greenwich Village Liberal Club, Arens met *The Masses* contributors Floyd Dell and John Reed. In early 1914, Arens sends a playful letter to Dell at *The Masses* asking for his critique on a piece of Arens's poetry.⁶ *The Masses* was well known for its radical left-wing politics. Not only did *Playboy*'s editorial content mirror that of *The Masses*, but war-journalist and regular *Masses* contributor Louise Bryant was also a writer for the first issue of *Playboy*.

Fueled by Arens's leftist politics, *Playboy*'s backlash to elitism had not only artistic but also socio-economic implications. Arens's membership in the Greenwich Village Liberal Club, and his work as editor of

the periodical *War?* make it clear his political ideology was the driving force behind the anti-capitalist commentary found in *Playboy*'s editorials. Before his work on *Playboy*, Arens served as the editor of the anti-war art periodical *War?* published in May of 1916 by the Collegiate Anti-Militarism League at 32 Union Square, New York.⁷ Arens's credited involvement is limited to the first of the four issues collected by the New York Public Library; however, an advertisement for the Washington Square Bookstore appears in issue four, published in August 18, 1917, which clarifies the bookstore's appeal to a young, liberal demographic. William Gropper's "Parliament of the People" cartoon featured in the first issue of *Playboy* shows Arens's political sympathies did not change drastically in the years after his time as editor of *War?*; however, despite his alignment with the periodical's politics, Arens withdrew his contributions after an argument with *War?*'s publisher Karl Karsten. Karsten was Arens' friend from his time at the University of New Mexico where they took on parallel roles for *The Mirage Yearbook* in 1910.⁸ In a correspondence to Arens on April 2, 1916, Karsten states he is unwilling to financially support a second issue, at which point Arens's demands 100 dollars in back pay for his artistic contributions.⁹ Despite his dissatisfaction with the publication, Arens is assured by Karsten that once an artist has their name published in a little magazine such as *War?*, they receive "invitations from two or three magazines to write articles."¹⁰ Karsten believes this is "a tremendous

benefit" to Arens because he will be able to sell "and to write much more successfully, as the result of *War?*".¹⁰

While there is no way of measuring whether Karsten's promises held true, *War?* seems to have solidified Arens's purpose in New York. In the same letter to Karsten on April 2, Arens mentions he risked his position as manager of the Peoples Symphony Concerts at Cooper Union College due to the intensity of his involvement in *War?*. The concert series was founded by Arens's father Franz, who owned the Arens Vocal Studio at 308 West 56 Street, New York.¹¹ In 1915, Arens joined the company as a member of the Board of Trustees at his father's request. The position was time consuming, and in a letter from Arens's friend George Cronyn in August 13, 1916, Cronyn discourages Arens from assuming a managerial position for a second season. Cronyn suggest that Arens should "confine ambition now" rather than "lose fulfillment of any at all," advice that most likely prefaced Arens's acquisition of the Washington Square Bookstore in 1917.¹² More than his experience as editor of *War?*, Arens's ownership of the Washington Square Bookstore seems to have promoted Arens to a prominent member of the Greenwich Village art scene, allowing him to recruit artists who were later seen as important shareholders in the modernist movement.

The Washington Square Bookstore was established by Albert and Charles Boni in 1913 and quickly became a creative center for Bohemian Greenwich Village due to its proximity to the Greenwich Village Liberal

Club and its ties the local theatre troupe, The Washington Square Players. In 1915, the Boni brothers sold their bookstore to Frank Shay, who began publishing plays performed by the local theatre troops. While Shay was busy appealing his conscription in 1917, he "handed over the bookshop" to Renée Lacoste, who passed on the shop to Arens later that year.¹³ According to the February 1918 issue of *The Quill*, Arens

encourages local artists to use the bookstore as a forum. Arens's emphasizes this point by reminding readers of when the bookstore acted as an impromptu stage for the Washington Square Players, an acting troupe that performed in the bookstore under Shay's ownership. The artists Arens hoped to attract are found in his "Who's Who" section of the *Little Book of Greenwich Village*. Reflective of the tongue-in-cheek prose that dominates *Playboy*'s earlier issues, the handbook assigns a silly, biographical vignette to each of Greenwich Village's notable residents. These playfully written descriptions range from "wriggly-line artist" to "officially crowned King of the Village." There are over thirty artists listed who are familiar enough to Arens to be mentioned in his handbook. A few of these featured residents like Marie Carolyn Davies—listed in the handbook as "cow-girl, broncho-buster, and poetess"—would contribute to *Playboy* the following year.¹⁵

THE LITTLE THEATRE SERVED AS A VEHICLE BY WHICH AVANT-GARDE PLAYWRIGHTS COULD DEBUT EXPERIMENTAL WORK TO A CULTURED, APPRECIATIVE AUDIENCE.

Like the Washington Square Bookstore, Arens's publishing company, Flying Stag Press, initially served Greenwich Village's little theatre movement, a theatrical counterpart to the little magazine. In the January 1918 issue of *Poetry*, Harriet Monroe credits the New Theatre in Chicago for starting the little theatre movement in 1906.¹⁶ Like the little magazines, the little theatre served as a vehicle by which avant-garde playwrights could debut experimental work to a cultured, appreciative audience. By 1910, this movement had spread to New York, marked by the appearance of small-budget

acting troupes such as the Washington Square Players. Arens continued Shay's work by publishing plays for the little theatre through the Washington Square Bookstore, titling his series: *Flying Stag Plays*. They appear as the first published works of the Flying Stag Press, advertised in the February 1918 edition of *The Quill*. For three dollars, a reader could subscribe to the series of nine plays to be performed by various theatre companies, including the Washington Square Players and the Provincetown Players.¹⁷ This series was a crucial forerunner to *Playboy* because Arens's role as a publisher eventually expanded to that of a printer. In 1918, Greenwich Village playwright George Cronyn's *the Sandbar Queen*, the second play in the Flying Stag series, credits "Egmont Arens at the Washington Square Bookstore" as its printer.¹⁸ Printed a year before the first issue of *Playboy*, the series proves Arens had the technology to produce a little magazine without outsourcing the printing.

The first issue of *Playboy* aims for quarterly periodicity, but by issue two Arens proposes a more ambitious publication schedule, one where *Playboy* is "printed every two months during 1919, and every month thereafter." The first issue is no longer sold "separately, and will be available only to those who subscribe for twelve numbers." This unstable periodicity seems to be due to an unexpected popularity, as the supply of issue one was "nearly exhausted," and a general lack of funding. In the same "Important Notice" in issue

two, Arens writes "to function properly as an Art Magazine, *Playboy* must have color plates. The high cost of process printing puts this out of the reach of a twenty-five-cent magazine." Rather than raise the price, Arens encourages donations to the "Playboy Fund, for which checks should be mailed to Egmont Arens."¹⁹ This lack of funding plagues *Playboy* throughout the entirety of its run, something on which Arens regularly

ONLY A FEW OF THE INDIVIDUALS HAVE "THE COURAGE" TO BE SUCCESSFUL IN "THIS GREAT ADVENTURE OF LITERATURE AND ART."

periodical *Charm*, receives a letter from Arens in which he writes: "I play at business, which I hate. I get involved in a thousand things which keep me from the things I want to do...I am a flood of half-articulated ideas and emotions, but they are submerged in a flood of figures about the price of paper, and printing ink, and remodeling of apartments, and store accounts, etc." He adds that he is "trying to raise some kind of a backing for *Playboy*, so it can come out more regularly."²¹ Contributing also to the 1920 hiatus was the relocation of the Washington Square Bookstore: "I have a month's hard work ahead of me—moving the bookshop to 27 West 8 and another *Playboy*," writes Arens to Davied on April 28. The benefit of this hiatus seems to be that Arens further integrated himself into the Manhattan art scene by printing brochures for the local galleries, one of which is a catalogue for the Kingore Gallery exhibition on American Sculpture located at 668 5th Avenue, New York.²² As a result, the three issues of *Playboy* published after hiatus rely more heavily on art borrowed from local galleries, unlike the submission-based periodicals Arens published in 1919. For the final issue, published in June of 1924, Arens reaches out to William Ivins at the Metropolitan Museum of Art asking "whether it would be possible to secure a photograph of the picture 'Map of Venice' in the book Bernard von Breydenbach – 'Perigrinations en Terre Sainte' (loaned by the Morgan Library) for reproduction in *Playboy*.²³

In the years leading up to the 1920 hiatus, *Playboy* acquired a cult following. In

Playboy's seventh issue published in 1921, Arens acknowledges in an editor's note that despite "having many subscribers" *Playboy* "did absent himself for many moons."²⁴ According to the *Playboy* subscription cards found in the Egmont Arens Papers at Syracuse University Library Special Collections Division, the periodical had approximately 255 subscribers from 1919 to 1921. Thirty-three percent of the subscribers were from New York City, ten percent were from California, and nine percent were from New York State. Twenty-five of the fifty states and ten foreign countries were represented in the subscription cards. Some unexpected subscriptions include requests from Havana, Cuba; Osaka, Japan; Paris, France; and Shanghai, China. The cards also show Arens had a subscription exchange with the editor of *Poetry*. This wide range of readership corresponds to Arens's own observations in a letter to Davied on January 8, 1920. The rejection letters not only help to establish a set of artistic guidelines by which submissions were filtered, but they also show the extent of the magazine's reach, far outside the niche of Bohemian Greenwich Village. Arens writes that he sent copies of *Playboy* to a person from Ft. Wayne, Indiana, who inquired about joining the periodical's staff. Arens is pleased with the diversity of submissions, but he is also sad for only a few of the individuals have "the courage" to be successful in "this great adventure of literature and art."²⁵

This letter to Davied marked the progression of a long-distance relationship

that would culminate in her move to New York in 1921 and, ultimately, Arens' divorce from his first wife. In a previous letter, Davied writes that their relationship is not "nice," referencing Arens's marriage to Greenwich Village writer Josephine Bell. In the January 8 letter, Arens is hurt but undaunted, countering that "[Walt] Whitman was not nice either." By mid-1920, Arens is convinced his marriage to Bell is unsalvageable. Initially, Arens writes that he is "far too impassioned a person to undertake having affairs,"²⁶ but by March, Arens disregards his earlier caution and begins to use *Playboy* as an emotional liaison between himself and Davied. He offers her a job as a secretary at the Washington Square Bookstore, hoping to persuade her to come to New York and leave her home state of Kentucky. In the letter, Arens gives Davied explicit instructions on how to proceed so Bell will not be suspicious. He described Davied's move to New York as "an adventure fraught with danger, yet very fine if we've got enough character between us to avoid disaster."²⁷ In a March 3, 1920, telegram to Arens, Davied turns down the job offer and refuses to move to New York. Arens is quick to admit even he is torn between the "possibility of doing hurt and the impossibility of continuing unsatisfied" in a letter to Davied on March 4. At the bottom of his note, Arens writes he has "engaged a young man as secretary," the type of wry humor seen in *Playboy*'s earlier issues.²⁸ At the height of their correspondence, Arens goes so far as to write Davied a mock *Playboy*. In April of 1920, Arens sends her a

make-shift periodical titled *Songs of Play and Rest*. The introduction page reads: "Here on this day of warm sun, I have run away from my work into a park of budding trees to write a little book for you. The edition will be limited to one copy." The book followed the layout of *Playboy*, with Arens' original sketches and a section at the end for advertisements: "Wanted: Good doctor to cure wounded heart. Apply quick!" and another advertisement to dissuade Davied from going to college: "School of Life: Don't decide on a college course till you've investigated this school/Learn to live and love and knowledge will dwell with you always/Best professors." There was also a subscription blank: "Dear Editor: Enclosed you find my love, send me yours always."²⁹

Despite the ironic use of *Playboy* as a go-between for Arens and Davied, his letters grant a great deal of insight into the depth of Arens's influence on *Playboy*'s content. In one correspondence, he compares himself to the main character of W. Somerset Maugham's *The Moon and Sixpence*, a play based on the life of artist Paul Gauguin. In this letter, Arens talks about The Gauguin Issue of *Playboy* by writing that "it will be the number in which I will be reflected—that is the side of me that I like."³⁰ The Gauguin Issue, or *Playboy* number six, deviated from the periodical's traditional format in that the majority of featured art comes from a single artist. Here Arens role as editor is most transparent. Unlike previous where he stays primarily uncredited, Arens authors a five-page editorial called "The Savagery

of Gauguin." If what Arens writes about Davied is true, his article on Gauguin reflects Arens's desire to find art that is honest, similar to his thoughts on D.H. Lawrence, that art should find "good healthy roots in the soil of the realities." In the Gauguin article, he quotes from the artist's diary: "All the joys, animal and human, of a free life are mine. I have escaped everything that is artificial, conventional."³¹ From Arens's letters, it seems this issue was the one in which his influence was most profound. The history behind *Playboy* issue six also contains undertones of Hugh Heffner's unrelated modern-day *Playboy* magazine in that it served to facilitate Arens's secret romance with Davied. On April 7, 1920, "The Editor" of *Playboy* sends Davied a postcard announcing she will receive *Playboy* issue six under a separate cover with "a special supplement."³² The special supplement is a love letter from Arens. In a follow-up message to Davied on April 12, Arens explains he was sentimental in writing the love letter: "I touched my lips were yours might touch if you too were sentimental upon receiving it."³³ Eventually, Davied gave in to Arens's request and moved to New York in the summer of 1921. In a letter to Arens on September 1, 1921, she writes that she will send Arens a permanent address when she establishes herself. The year before, in an unsent letter to his wife in March of 1920, Arens writes: "I feel the importance of being myself, on account of my work."³⁴ However, Arens work would fall apart along with his marriage. In 1924, Bell divorced Arens, three

years after Davied moved to New York.³⁵ That same year marked the final issue of *Playboy*. There is nothing in Arens's personal correspondences that states why *Playboy* ended, but there are indications that Arens's devotion to *Playboy* was superseded by his work as editor of *Vanity Fair* in 1923 and his involvement in *The Masses*. On December 12, 1925 Arens receives a letter from Frank Crowninshield, editor of *Vanity Fair*, who writes: "I was greatly excited to hear that you are going to start *The Masses* again. With Gellert and Gropper you ought to have a great magazine."³⁶ Arens also appears to have delegated some of his responsibilities as editor, when in early 1924 he establishes a *Playboy* advisory board at 39 West Eighth Street, New York, consisting of Louis Bouché, Frank Crowninshield, Ilonka Kárász, Edmund Wilson and Carl Zigrosser.³⁷ During this time, *Playboy* underwent several changes, the most visible being the change in price-per-issue from 25 cents to one dollar. There is also a noticeable increase in the number of pages per issue, with the 1919 issues averaging approximately thirty pages, significantly lower than forty-five pages in the 1924 issue. Unlike the first issue, where Arens is credited as sole proprietor, *Playboy* appears to have grown into something that is beyond the capabilities of a one-person operation. In *Playboy*'s final year, Arens attempts a financial revival by hosting themed subscriber dances in an attempt to raise money toward the publication. The dances, sponsored by Flying Stag Press,

were open only to "subscribers and their guests." These subscriptions were issued to "representatives of the *Seven Arts* and their friends, and those who are on *Playboy*'s special list. In short, if you do not paint, sculpt or dance, if you do not act, sing or play the zimbalom, if you are neither a poet, a columnist or a bootlegger, you are not eligible for subscription, unless you get some intimate friend of the Muses to go bond for the essential beauty and joyousness of your nature." The three balls were Dans Dionysus on October 17, New Year's Eve on December 31, and The Circus Ball on March 20 collectively called "*Playboy*'s Three Lively Dances of the Seven Lovely Arts."³⁸ This is in contrast to Arens's philosophy in 1920, when he sends a rejection letter to an anonymous poet who asks to be credited under a pseudonym because he is "not naturally naughty." Arens responds that the magazine was not meant to be risqué but rather frank.³⁹ By 1924, Arens's visuals are pushing the boundaries of risqué. An unaccredited linocut advertising *Playboy*'s Cubist costume carnival "Fêté Futuriste," shows the backside of provocatively dressed woman as her male dancer companion gropes her. In addition to these dances, the final issue of *Playboy* includes a plea for money, hoping to establish a group of patrons who would pledge anywhere from \$250 to \$25 annually. Arens promises that members of the supporting group will receive "special copies of the magazine, each number of which will contain at least one original signed lithograph, etching or

woodblock print, by a well known artist."⁴⁰ Despite Arens's efforts, the 1924 issue appears to have lost traction with some of his prominent contemporaries. On October 17 Arthur Moss, editor of *The Quill*, writes about the final issue of *Playboy* in a clipping from *The Paris Times*: "Several Montparnassians are among the contributors to the last number of *Playboy*... There is a portrait of Camille the garçon de café, by Paul Burlin; a batik by Bertram Hartman and a childishly bad page by Hunt Diedrich... It actually is the artiest looking publication I have ever seen. There are several good reproductions, but the writing, particularly by the editor, is a sad waste of ink and paper."⁴¹ Seemingly fitting, the 1924 *Playboy* opens on an editor's note titled "*Playboy* writes upon the sand," recalling the reprint of the advance announcement found in the first issue. After the end of *Playboy*, Arens's publishing company, Flying Stag Press, continued into the late 1920s, advertising "particularized printing for artists." One advertisement states: "We have printed woodblocks, linoleum blocks, catalogues of art exhibitions, portfolios, and books for such artists as Rockwell Kent, George Bellows, Ilonka Kárász, William and Marquerite Zorach, Paul Thevenaz, Pamela Bianco, Max Bohm and Randall Davey, to mention but a few."⁴²

Playboy was designed for the politically and artistically radical Bohemian Manhattan in the early twentieth century. Although the periodical ended in 1924, *Playboy* remains relevant by showcasing the development of then-unknown modern artists such as

Rockwell Kent, Max Weber, and E. E. Cummings. *Playboy* offers an intimate look at the interconnectivity of the resident artists of Greenwich Village. At the center of this network was Arens's, who integrated himself into the Bohemian culture by developing a center for creative activity at the Washington Square Bookstore. Arens' anti-capitalist sentiment and his criticism of class boundaries are still viable issues in modern-day society nearly one hundred years after *Playboy*'s first publication. 

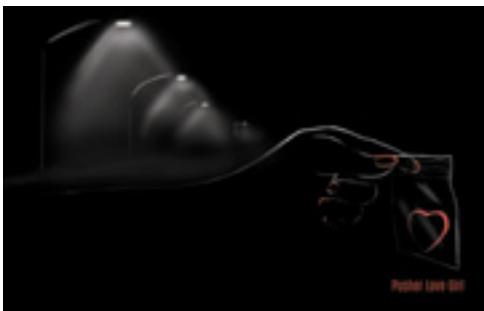
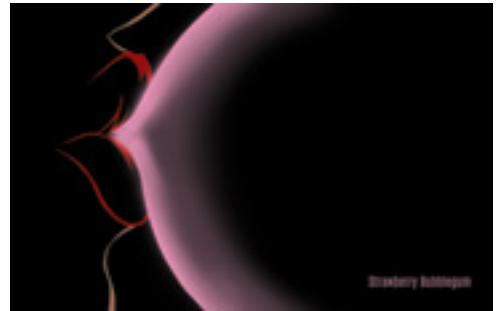
ALTHOUGH THE PERIODICAL ENDED IN 1924, PLAYBOY REMAINS RELEVANT BY SHOWCASING THE DEVELOPMENT OF THEN-UNKNOWN MODERN.

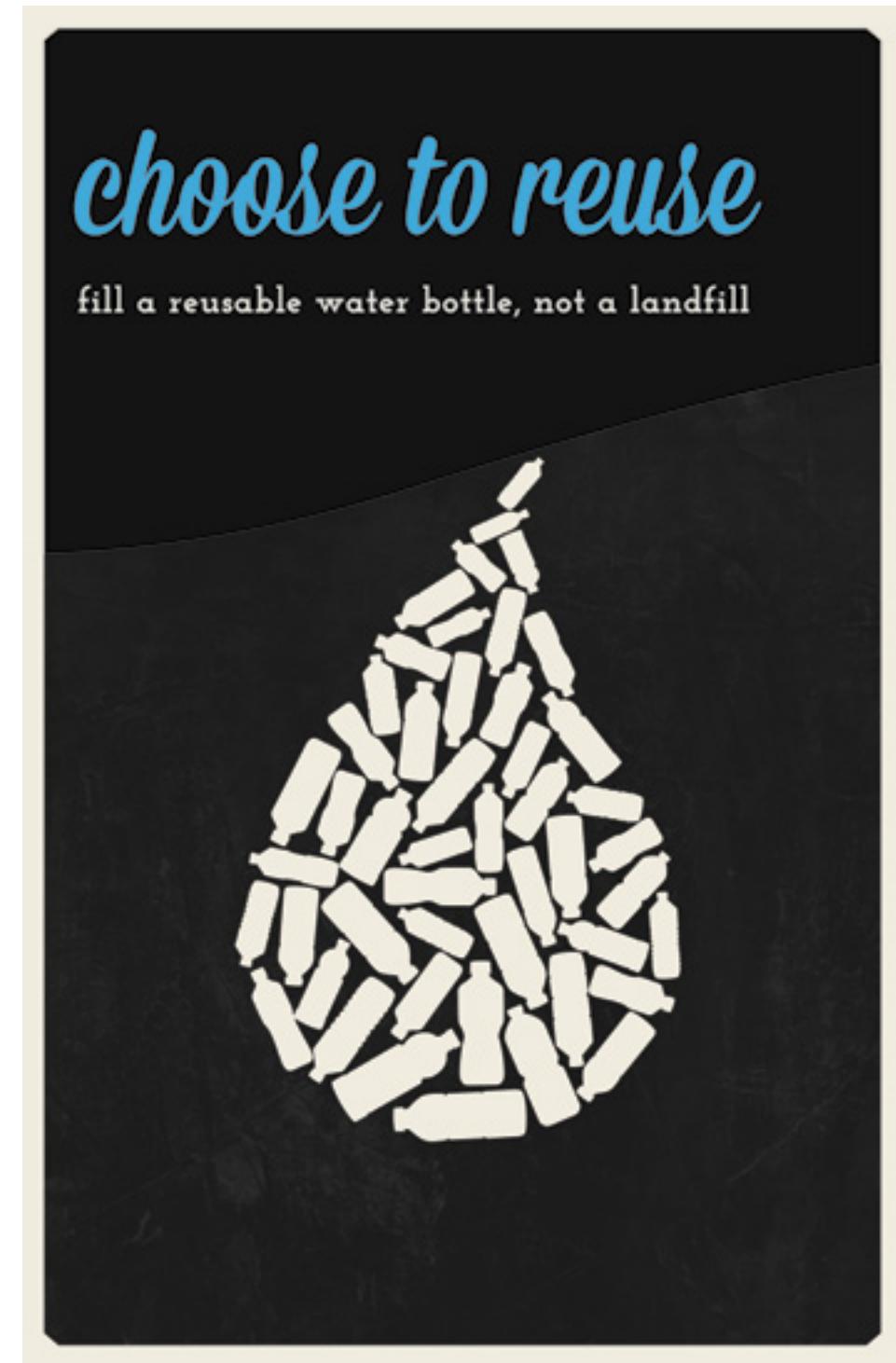
GRAPHIC DESIGN

ILLUSTRATED VISIONS

Christopher Herrera

Illustrated Visions is an artist book for Prof. Marilyn Jones's Graphic Design II class. My goal was to take specific songs from Justin Timberlake's 20/20 Experience album and translate them into visual pieces. My style was heavily influenced from rim lighting photography and Batman: The Animated Series. The illustrations were done in Adobe Photoshop using a Wacom tablet and compiled in Adobe InDesign.

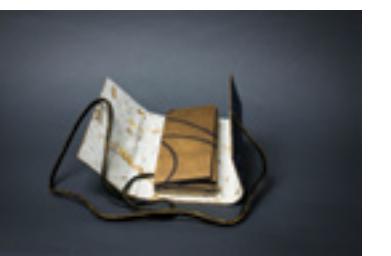
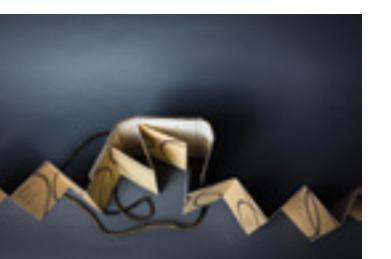




TWO POSTERS, ONE STYLE

Elizabeth Phillips

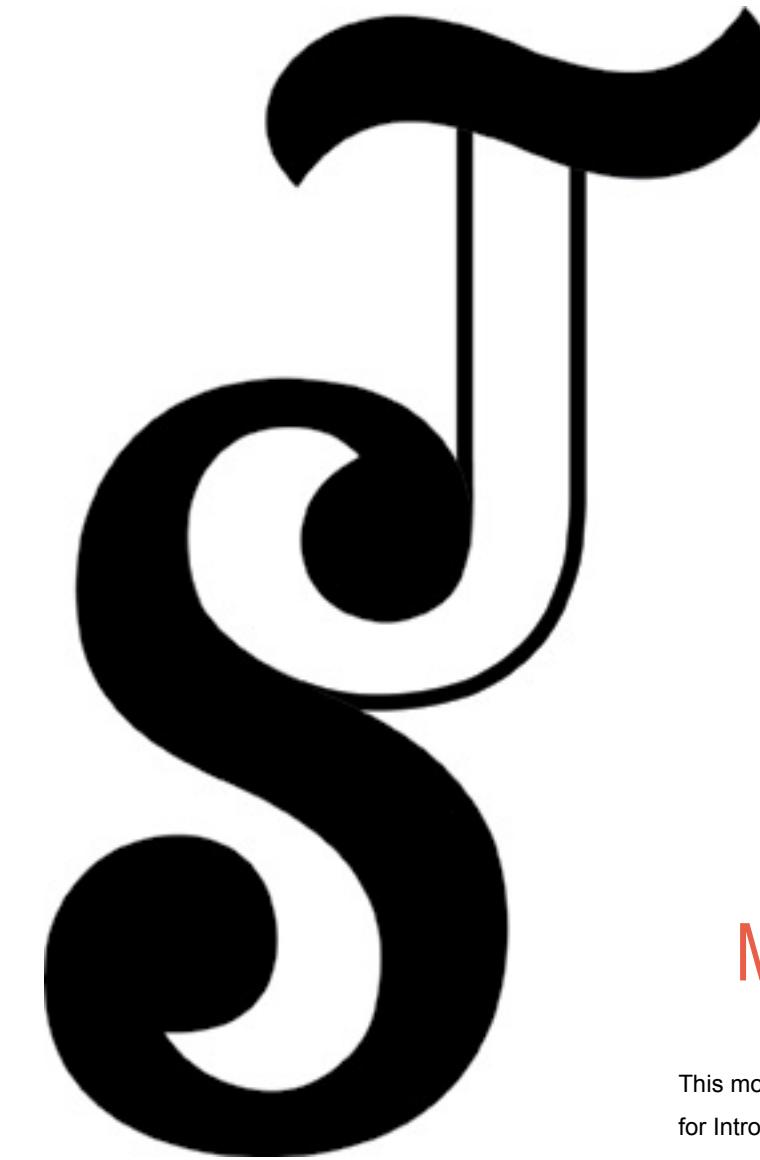
This set of posters was designed in Graphic Design 2, and, while they have the same graphic style, they are designed for two different purposes - one to promote a concert and the other to advocate the use of reusable water bottles. Both posters use a predominately black and ivory color scheme and utilize positive/negative space to create implied shapes. Script text in a bold color draws attention to the minimal but important type. Both posters were designed in Adobe Illustrator; the final pieces were printed on semi-gloss paper and mounted on foam core.



GUARANTEED

Elizabeth Phillips

Statement: This artist book was created for Graphic Design 2 and is based on The Eddie Vedder song, "Guaranteed", and is meant to be a visual representation of the song. Particularly influential lyrics were: "circles they grow and they swallow people whole" and "owning me like gravity are places that pull." I used a circle motif throughout the page design to visually intertwine the lyrics and combined two accordion folds to create a design of gravity. When the book opens the pages get lighter and lighter in color and unfold to reveal the song's lyrics. To represent the second half of the song, which does not have lyrics, the reverse side of the pages is a mirror image of the circle pattern without the lyrics, and, as the book closes, the pages grow darker and darker. The pages were designed in Illustrator, printed double sided, and hand scored; the binding/cover was hand cut and covered in specialty paper and finished with a hand-sewn clasp and painted leather-wrap closure.



MONOGRAM

Jaclyn Sands

This monogram of my initials (JS) was created for Intro to Graphic Design with Holly Tienken in Fall 2014. I created it digitally using Adobe Illustrator. My primary idea for the piece was to interlock the similarly curved forms of the letters - and use the contrast between black and white to set them apart from one another.



TIME ENJOYED WASTING
Grace Johnjulio

TECHNOLOGY, TRENDS, & TRANSFORMATION

examining the evolution of poster design

Abstract Graphic Design is a discipline and medium that has rapidly evolved and has been greatly defined and redefined in the modern digital age - making its pre-digital history often forgotten. In this essay, written for an independent art history course under the guidance of Professor Marilyn Jones, I explore how poster design, which relies heavily on the combination of word and image is linked to the history and evolution of graphic design. By examining the development and evolution of manual printing techniques as well as the influence of different artistic movements, this essay shows how the history of graphic design and poster design have been intertwined over the centuries.

Graphic design is a slippery medium to fully define, as it often seems to fall somewhere between art form and marketing and encompasses logo design, page layout, packaging design, and many more things. However, there is one common thread that holds all of these different aspects of graphic design together and may be the best way to define the medium-- the interaction between word and image. Despite its relatively brief history, graphic design has undergone many changes, perhaps most important are the technological advances that have changed the way word and image

are combined. While modern graphic design reaches into print, web, and multi-media applications, its roots in print design, and particularly poster design, are an important part of its history, present, and future. Tracking the rich history of poster design reveals technological advances, popular artistic movements, and the evolution of how word and image are combined in the field of graphic design.

The history of poster design dates back to the 1700s and largely depends on the technology and methods of printing that were used to create posters. Some printing methods like wood block printing

are an important part of poster design, however, the technology also pre-dates what is considered the “first poster,” however, this is true of other technology that became extremely important to poster design and production, as it was the evolution of pre-existing technology that allowed multi-color lithograph posters to develop. Therefore, by understanding early printing techniques like wood-block printing and lithography, as well as their applications to create broadsides, other forms of advertisements, and illustrations can help explain how poster design developed and combined the usually separate entities of word and image.

Poster design has also been influenced by a variety of different artistic movements and styles and in some cases has even been the origin of an artistic style. However, three movements in particular are very important to the history of poster design: Art Nouveau, which represents the earliest poster designs and multicolor lithographic posters; Art Deco, a movement that coincides with industrialization and transportation advancements; and Swiss Design, which is a style specific to poster design and demonstrates a shift toward symbolism and minimalism.

By examining both the technological advances and some of the most influential stylistic movements of poster design, a better understanding can be gained about the sometimes mysterious field of graphic design as well as the future of poster design in the digital age. This history also reveals how word and image have been combined

to create the field of poster design and finally how the interaction between word and image has evolved. This evolution of word and image is just not an important part of poster design, but it is also very important in defining the history and evolution of graphic design.

EARLY PRINTING TECHNIQUES

Early printing techniques were important to the history of graphic design, and more particularly poster design, because they allowed mass reproduction and distribution of a singular image. There are two printing techniques specifically important to the development of poster design: lithography and wood-block printing. Both mediums were popularized and advanced for different reasons, yet lithography is perhaps the most associated with poster design because although it started as a simple process to reproduce text it was developed into a



Wooden type specimen sheet and process of creating wooden type.

technique that produced images and text in a rainbow of colors and was simple, versatile, and lent itself to rapid mass reproduction. However, woodblock printing is equally as important as is the means of producing broadsides, which can be considered the predecessor to poster design, and was also developed to be able to reproduce images.

Broadsides were perhaps the first “advertisements” produced and are like proto-posters, as they did not use images but contained only type. Broadsides were printed on one side only, similar to flyers, and were hung in public places or distributed to the public.¹ The printing process was simple and only used type, which was set letter-by-letter to make words, then the raised stamp-like letters were inked and pieces of paper pressed onto them to create the print. Their primary function was to distribute government notifications, public announcements, and were also used for commercial and personal announcements.² Because of the urgency of the messages they carried, broadsides were often quickly and also crudely made. At first, they only used metal type, which was both heavy and warped at large scale, creating an uneven printing surface for the letter, making the letter not appear in its entirety and therefore compromise the legibility of the broadside. To remedy these problems and meet the demand for larger type, in 1827 Darius Wells introduced a streamlined process for manufacturing wooden type, which was much quicker and easier to mass produce.³ Most importantly, wooden type did not warp and create an uneven surface

like metal type, allowing lettering to become larger and typefaces more abundant and readily available.

Long before the wooden type invention and popularization in the 19th century, wood-block printing had been used in Japan as early as the 8th century to produce illustrated Buddhist text, reproduce written texts, and mass produce illustrated advertisements.⁴



Crow and Heron, or Young Lovers Walking Together under an Umbrella in a Snowstorm, ca. 176.

While wooden letters contributed typefaces, Japanese wood-block printing used a similar method and applied it to illustration. Much like the individual letters were carved out of wood to create a stamp of each individual letter, Japanese wood-block prints were created by a carver, recreating an artist's sketch in relief. At first, wood-block prints were only printed in black and white and individually hand-colored afterward. However by the mid 1700s, they were produced in full color by layering wood-block plates, each inked with a different color and printed one

on top of the other to create a composite image with many colors. These prints were called *ukiyo-e* prints and influenced many Impressionist painters including Van Gough and Degas, who drew from the flat colors and bold black contour lines that defined the *ukiyo-e* style.⁵ *Ukiyo-e* prints were often advertisement for actors, theatrical performances, and even brothels and could be reproduced sometimes thousands of times before the carving became worn and the quality of the print deteriorated.⁶

The final method of printing that also became vastly popular and the preferred method of poster production is lithography. Lithography was invented in the late 1790s by Alois Senefelder, a Bavarian playwright, who realized he could reproduce his scripts by copying them onto limestone using greasy crayon, rolling ink onto the stones, and then offsetting the type from stone onto paper.⁷ However it was almost another half-century before the process became streamlined for mass production and was enhanced to hand-draw their own type, meaning they were not restricted to the typefaces that have been developed and manufactured for metal and wood type. Instead the world of hand-drawn type allowed artists to be inspired by these classic typefaces, while also creating their own variations, some of which were eventually developed into typefaces that are still in use today.

PARISIAN POSTER CRAZE

Jules Chèret produced the first color lithograph design, , in 1858 and

THERE ARE TWO PRINTING TECHNIQUES SPECIFICALLY IMPORTANT TO THE DEVELOPMENT OF POSTER DESIGN: LITHOGRAPHY AND WOODBLOCK PRINTING.

revolutionized the use of the lithograph, which had previously been used as a means of reproducing other artwork-- creating prints by using it as the medium for creating an artwork, instead of reproducing something that had already been made in another medium.⁹ Although Chèret produced the first color lithograph print, he was not the first artist to use the medium: For instance, Goya used the process of lithography at the beginning of the century and others had used lithography to create black and white illustrations for books and advertisements.¹⁰



Orphée aux Enfers, ca. 1858.

However Chèret's addition of color opened up the floodgates for poster design and so began the Paris Poster Craze, during which lithography and posters became inseparable and inescapable in France.

The Paris Poster Craze took place during the Belle Epoque, "beautiful Era," in France, which was the period after the Franco-Prussian War and before World War

I.¹¹ Most of the noted poster designers of this time either were French or worked in France and designed in a variety of style. Early posters designed during the Poster Craze by artists like Toulouse-Lautrec and Jules Chèret incorporated elongated figures with bold coloring that often interacted with the poster's typography. Their posters and those with a similar style often incorporated more painterly or watercolor-like features in the background and favored a color palette of red-orange, black, golden yellow, and less frequently a bold teal blue. The Poster Craze is known as such not just because lithographs posters were being created and produced in abundance, but because they were also being collected by people, sometimes to the point that the posters were being taken from the street.

The Paris Poster Craze demonstrates an important intersection of art, poster design, and advertisement that also characterizes

graphic design. Many of these early lithographic posters were advertisements, often for theatrical productions or the opera, and Chèret is often called the "father of poster design" for producing the



Quinquina Dubonnet, ca. 1895.

LITHOGRAPHY IS SUCH AN IMPORTANT PART OF POSTER DESIGN BECAUSE IT BROUGHT TOGETHER TYPE AND ILLUSTRATION AND REVOLUTIONIZED THE FIELD OF ADVERTISING



Moulin Rouge la Goulue, ca. 1981.

MUCHA & DECORATIVE ART NOUVEAU STYLE

Art Nouveau had an undeniable influence on poster design, and perhaps the converse is also true, as the popularization of posters was happening at the same time the movement was becoming prominent. However, it is important to understand Art Nouveau style is not as easily recognizable as a style like cubism because the movement had slightly different names in almost every European country and distinct regional styles. The term "Art Nouveau" has been applied in retrospect to encompass a movement that has different styles within it, for instance the bold graphic posters of Toulouse-Lautrec are often characterized as Art Nouveau, as are the more decorative, ornate, and organic illustrations of Alphonse Mucha. Mucha is one of the most notable and well-known artists who designed posters in the highly decorative Art Nouveau style and contributed iconic poster designs and style.

Mucha was born in Moravia in 1860 and moved to Paris in 1887 to study at the Académie Julian after a brief period of working as a theatrical scene painter and studying in Munich.¹² In 1894, he designed the poster *Gismonda*, for the actress Sarah Bernhardt, and was then contracted by her to continue designing her posters for the next six years.¹³ Mucha also worked in the decorative arts and in 1896, only two years after his breakout poster design, his first decorative panel series, *The Four Seasons*, was produced.¹⁴ His contributions and life work include: interior decoration, published books, teaching painting in America, mural painting, and even stamp design.¹⁵

While his influence and interests were very broad, his influence on poster design was strong. His highly decorative style of poster design was much more dense and often included an organic-inspired border or background pattern, with a female figure that had intricately designed clothing and hair, with type that was decoratively incorporated into elements of the overall design. Mucha also favored a much more muted and diverse color palette that complimented the nature-inspired elements of his designs.

ART DECO, THE AGE OF INDUSTRIALIZATION

Art Deco is another important and robust part of poster design history which has a much more distinct style than the broad range of styles that fall under the category of Art Nouveau. Posters in the Art Deco style are also very collectable and because

the style coincides with many technological advances, these posters advertise much more than plays, actresses, and operas. The figural focus of Art Deco posters is rarely a figure but instead a response to the industrial revolution and contain images of transportation innovations and mass produced products.

Art Deco posters make use of the newly developed airbrush, by incorporating gradients to create depth and volume.¹⁷ Overall they have a much more simplistic geometric composition, with bold and simple shapes. However, perhaps the most



Gismonda, ca. 1894.



Princess Hyacinth, ca. 1911.¹⁶

defining characteristic of Art Deco posters is the artist's intention for the viewer and the cleverness with which the posters were designed so that if seen in passing they could be understood, memorable, and communicate effectively. One of the posters that demonstrates this concept of cleverness of this style of poster is A.M. Cassandre's *Dubo-Dubon-Dubonnet*'s triptych poster.

This gradual increase of the main figure as he drinks Dubonnet wine sends a subtle yet potent message to the viewer that relies heavily on the interaction of the words and image of the poster. Meanwhile, the simplistic style and minimal bold lettering become highly recognizable and unforgettable. Cassandre, was a very important designer in the Art Deco style and designed many iconic Art Deco posters, including the Normandie, whose towering monumental perspective still speaks to the power of industrialization and transportation. Cassandra was also able to capture movement in his static posters, for instance his Nord Express poster offsets the

image to the left to make the train appear as if it is rushing toward the viewer, while also maintaining the same monumental perspective and visual punch as the Normandie poster.

Art Deco posters continue to be collected by museums and private collectors, and the style of these posters continues to influence modern graphic design. For instance, fonts have been based off Cassandre's signature, handwritten fonts. Furthermore, the overall clean and minimalist style of art deco poster has made the style

legibility. Many aspects of Swiss design are still prominent and used in graphic design today.

The grid layout system served as a strict organization system allowing type and illustrations to be arranged and aligned according to vertical columns and even horizontal guides. However, the grid was often altered and rotated at approximately a forty-five degree angle to create more movement and variety in the poster. This system of using vertical and horizontal guides to align text and images is still in



Dubo-Dubon-Dubonnet, ca. 1932.

more classic than the decorative and stylized Art Nouveau posters.

SIMPLE SWISS DESIGN

Another important style of poster design is the Swiss style of poster design, which is named because it originated in Switzerland in the 1940s and 50s. Swiss design is characterized by its grid layout system, sans serif type, bold yet limited color palette often with black or white lettering, and attention to

use today and is one of the most basic foundations of page layout design.

Swiss Design's attention to legibility meant that designers often favored the use of symbols or graphic patterns instead of the traditional illustrations of Art Deco posters. Although some Swiss Posters use photographs, simple illustrations made of rectangles and circles are more common. The tendency to use these simple illustrations to create symbols pushed



Left: Normandie, ca. 1935



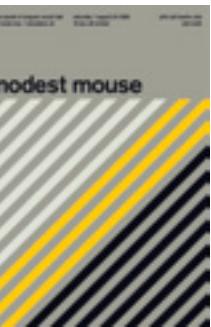
Right: Nord Express ca. 1927.

methods of production and styles used today. For instance, offset printing uses the same principals as lithography by creating a series of four metal plates each exposed to print a specific color (Cyan, Yellow, Magenta, or Black - CMYK) and when all four plates are combined they create a full color image.

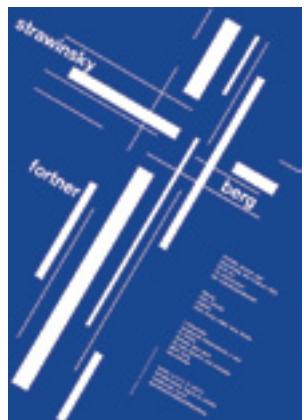
While offset printing has become automated and aided by technology it is an expensive process that requires strict attention to detail from the operator, who still controls many variables like making sure the plates line up and the image is correctly registered. Therefore, instead of lithography or offset printing, most posters are printed by laserjet or inkjet printers , which also depends on CMYK to produce a full spectrum of colors. However, these printers are much more digital and therefore do not require specifically made metal plates for each print.

The digital age has also caused poster design to evolve, as many advertisements or

from physical to digital is also representative of how graphic design has transitioned from a manual system to a digital system. Before everything was designed on computer programs, posters were hand-illustrated and type was not typed into a document



Swissed Posters.



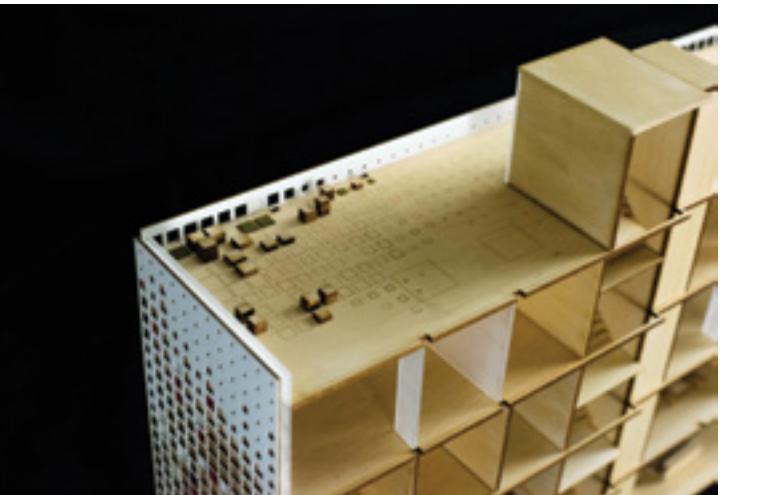
Zürich Town Hall Poster, ca. 1955.

SUMMARY

As a discipline of study, practice, and art, graphic design has become something that is an inescapable part of our daily lives and impacts them in subtle ways that may go unnoticed. Poster design is so important to graphic design history because it reveals technological advances, popular artistic movements, and the intersection of art, advertisement, word, and image.

"posters" that are seen everyday are digital and even sometimes interactive. The change

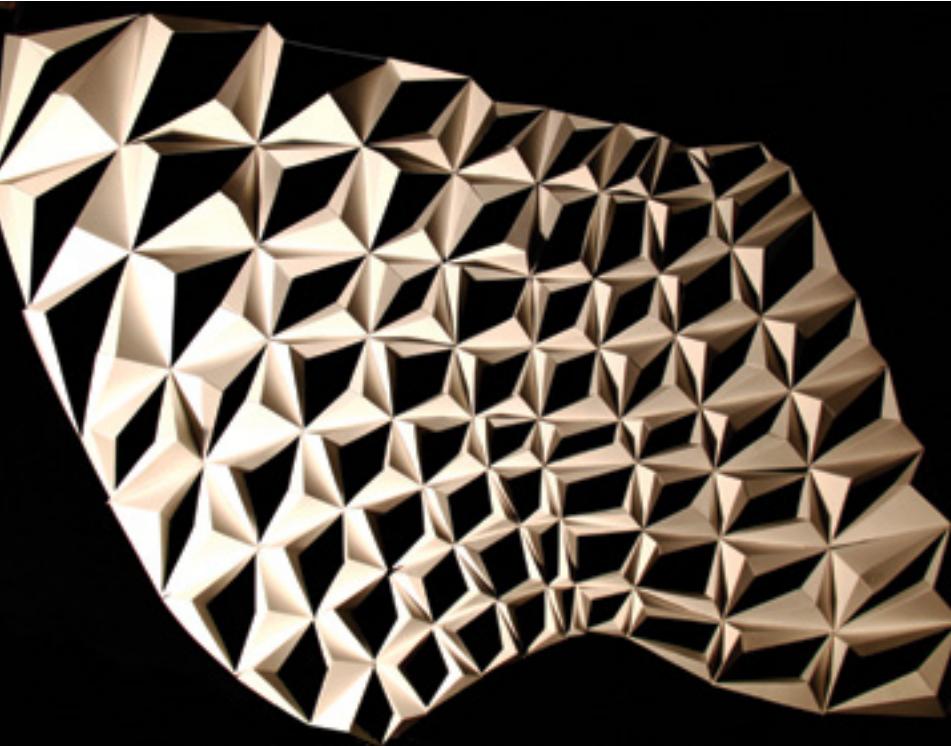
ARCHITECTURE



URBAN INFILL PROJECT: COMMUNITY CENTER

Jonelle Jerwick

The Urban Infill Project redesigns a small building space in an urban location. The design is constrained by the buildings on either side and is thus a practice in the logical arrangement of interior space. Program and function dictate where and how the space is organized. The project also provides an opportunity to design a building facade.



UNTITLED

Yuqing Ye

The project was made for the course Visualization and Fabrication in Architecture. The course and the project itself were meant for us to study the development of a simple unit element. Each project was the production of the variation of a pattern made up of the same unit element, which is the core of the design. The technique for the project includes diagram drawing and model making. The final model is made with bristol board.

YUCCA MOUNTAIN

an ethical study of nuclear waste disposal at yucca mountain

Abstract This paper was written as a term paper for Professional Development (CEE 203) taught by Professor John Wilson. It examines the risks and benefits associated with the first proposed geological repository for nuclear waste in the United States at Yucca Mountain. It also discusses the ethical dilemmas involved with the project.

Yucca Mountain is a proposed nuclear waste storage facility in Nevada. The proposed site, if implemented, would be the first geologic repository for nuclear waste in the United States. Currently, high level nuclear waste is stored onsite at nuclear power plants and other facilities that produce nuclear waste. This is only a temporary storage method for the hazardous waste we continue to produce at a rate of about 2000 metric tons per year. The geologic repository at Yucca Mountain is the only permanent solution that has been proposed and has no backup plan.

There are many positives to the use of Yucca Mountain. First, the geologic characteristics of Yucca Mountain make it an ideal site for storing nuclear waste. Also, the site would hold all of

the United States' nuclear waste in one location, avoiding the widespread risk of potential human health and environmental problems. Lastly, it would be a permanent solution to an issue that has only been dealt with on a temporary basis thus far. However, there are also many downsides to starting use of Yucca Mountain. Property values around the facility and along transportation routes would decrease, negatively impacting the economy. Nuclear waste has a negative stigma attached to it so the perceived risk is often greater than the actual risk, but there is risk involved with the project. The two major issues of concern involving risk are, first, the possibility of exposure during transportation to Yucca Mountain from nuclear waste generators across the country and second, the

uncertainty in the long term effects on the environment.

The Yucca Mountain project raises many ethical dilemmas about the risks posed to the public and the environment, and the risks to people in the direct vicinity of Yucca Mountain versus the risks to people near temporary nuclear waste storage sites, and long-term uncertainties. When analyzing these issues using different ethical theories like act-utilitarianism, pragmatism, and rights ethics, an argument can be made for both sides of each problem. The scenarios of continuing with temporary disposal practices, implementing Yucca Mountain now, or implementing emerging technologies can also be analyzed from an ethical perspective. The main conclusion drawn from this ethical analysis is that the Yucca Mountain is the best permanent solution the United States has of now. However, it should not be implemented until the benefits clearly outweigh the risks.

INTRODUCTION

Yucca Mountain is the proposed site for the first geologic repository for nuclear waste in the United States. Currently, there is no permanent disposal method for nuclear waste and it is being temporarily stored at numerous sites across the country. This lack of a permanent solution is a problem due to the high radioactivity of the waste. The United States depends on nuclear fuel for a significant portion of its energy, but if there is no way to dispose of the waste products permanently, this is not a sustainable method

of energy generation. Yucca Mountain has no backup plan, so if the project is not implemented then we have no choice but to continue with temporary storage of the waste.

2 NUCLEAR WASTE AND YUCCA MOUNTAIN

Nuclear reactors produce electricity through the use of fuel made from enriched uranium pellets. The waste that is produced from this process is highly radioactive. With any radioactive materials, the hazard is reduced with time due to the fact that they undergo exponential decay. The more radioactive a substance is, the shorter its half-life is and the less time it takes to decay. In order to protect people, as well as the environment, nuclear waste needs to be disposed of carefully because this hazardous waste emits radiation and is highly toxic if inhaled. The purpose of this section is to introduce nuclear waste and discuss current disposal methods as well as the proposed Yucca Mountain facility.

2.1 Nuclear Waste

Nuclear waste can be defined as "the leftovers from the use of nuclear materials for the production of electricity, diagnosis and treatment of disease, and other purposes". There are six general categories of nuclear waste: spent nuclear fuel from nuclear reactors, high-level waste from the reprocessing of spent nuclear fuel, transuranic waste mainly from defense programs, uranium mill tailings from the

mining and milling of uranium ore, low-level waste and naturally occurring and accelerator-produced radioactive materials.¹

Spent nuclear fuel is the fuel that has already been used and its fission process has slowed, making it no longer useful or efficient for electricity generation. This used fuel is considered a high level waste because it is still hot and radioactive which makes it potentially dangerous. Other high level radioactive wastes are materials that remain after the spent fuel is reprocessed.²

In 2003, 19.4% of all energy produced in the United States was from nuclear energy. In general, a nuclear power plant generates about twenty metric tons of spent nuclear fuel annually. The entire nuclear industry generates about 2,000 metric tons of used fuel per year and, over the past forty years, has produced a total of about 71,780 metric tons.³ This is a significant amount of toxic waste that needs to be disposed of with minimal harm to humans and the environment.

2.2 Nuclear Waste Disposal

Unlike municipal waste, radioactive waste cannot be disposed of by incineration or landfill. Decay is the only way that radioactive waste can become completely harmless, which means that safe storage is the only option for disposal. For high level waste, the total time of decay can be thousands of years, so long-lasting storage and disposal is vital for public safety. Currently, the waste is stored in temporary locations across the United States because there is no permanent

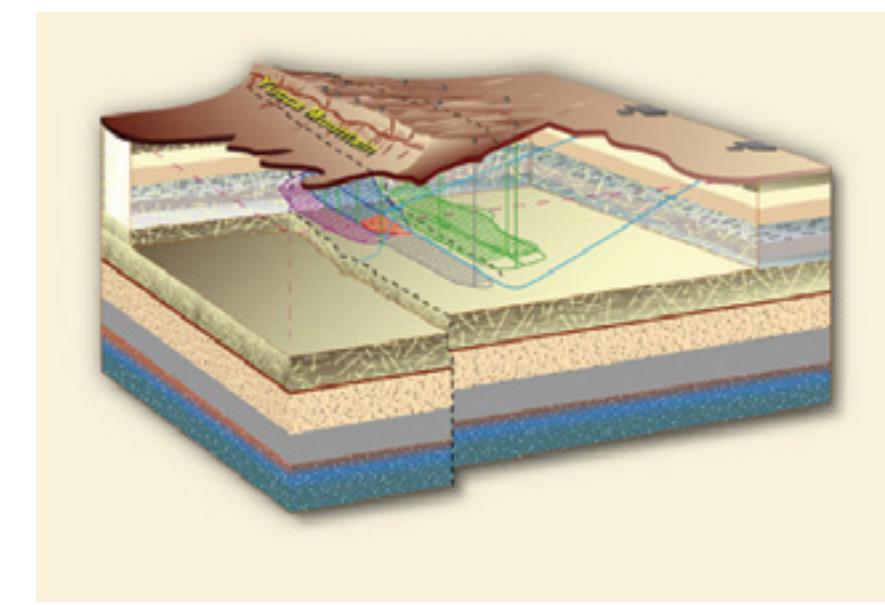


Figure 1 : Yucca Mountain Repository.

solution for nuclear waste disposal. About 10,000 meters³ of high level waste is produced each year, in spite of the fact that there is no permanent solution for disposal.⁴

The two types of storage used by the nuclear power plants in the United States are spent fuel pools and dry cask storage. Spent fuel pools, are made of concrete and reinforced with steel liners. They are several feet thick and the spent fuel is stored under twenty feet of water to provide shielding from radiation. The cask loading pit is in place to avoid any contact with the waste already in the pool. Dry cask storage came about because many pools were filling up with nuclear waste and therefore a new storage method was needed. Dry cask storage consists of storing nuclear waste, surrounded by inert gas, in a cask (usually a steel container that is welded shut to prevent

any leakage). This type of storage can only be used once the waste has cooled in a fuel pool for at least one year and the casks must be surrounded by other steel or concrete structures to prevent radiation. Majority of the nuclear waste in the United States is stored in fuel pools; however, the number of dry casks is growing as the fuel pools are reaching capacity.⁵

A more permanent disposal method is needed if we are to continue producing nuclear waste. "Geologic disposal remains the only scientifically and technically credible long-term solution available to meet the need for safety without reliance on active management", according to the National Research Council of the Academy of Sciences in 2001. Storing the waste in deep geologic repositories has been deemed the best way to permanently dispose of nuclear waste by the international science

community. Many countries, including the United States, are in the process of selecting sites for these repositories and getting them approved by various government agencies. These repositories are supposed to separate the radioactive waste from the biosphere and keep the waste secure over thousands of years. In order for this solution to be viable, however, there needs to be some certainty about how secure the waste would be and if there is any possibility of leakage into the environment. Geologic isolation of the waste has been proven

ABOUT 10,000 MILES OF HIGH LEVEL WASTE IS PRODUCED EACH YEAR, IN SPITE OF THE FACT THAT THERE IS NO PERMANENT SOLUTION FOR DISPOSAL.

effective, but the long term reliability is still in question.

The Nuclear Waste Policy Act (NWPA) of 1982 regulates the disposal of nuclear waste in deep geologic repositories. The NWPA assigns regulatory responsibilities to

three federal agencies: The U.S. Department of Energy (DOE), The U.S. Environmental Protection Agency (EPA), and the Nuclear Regulatory Commission (NRC). The DOE is responsible for designing and constructing

possibilities. Yucca Mountain is a good location for this type of facility because of its geologic features. The waste would be able to be stored about 1000 feet below the peak of the mountain and still be about 1000 feet

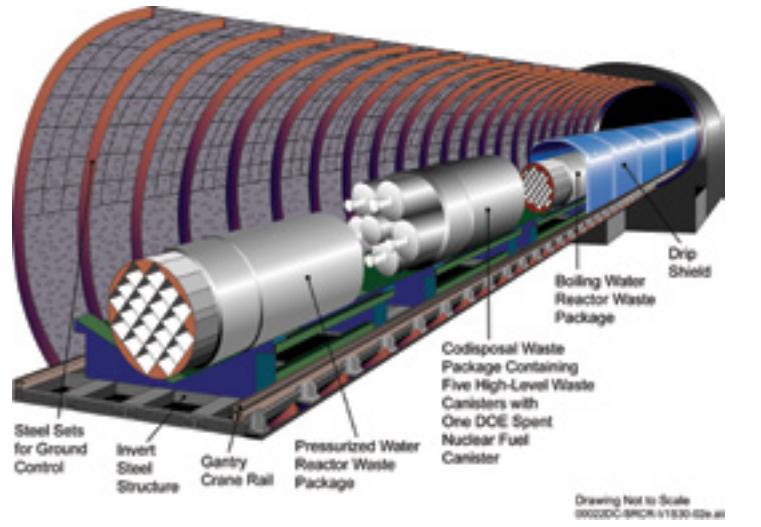


Figure 2: Tunnel Storage Setup.

the facility, the EPA is responsible for setting environmental standards which will assess the safety of the site, and the NRC is responsible for regulating, licensing and overseeing construction of the depository.⁶

2.3 Yucca Mountain

Yucca Mountain is a remote site in the desert of Nevada, about one-hundred miles northwest of Las Vegas. Yucca Mountain, as assessed by the EPA, is an acceptable distance away from any wells, agriculture, and human population.⁷ It was proposed as the primary candidate for the first geologic repository in the U.S. by the 1987 amendment to the NWPA, eliminating other sites in Texas and Washington as

above the water table. Figure 1 shows how the waste would be stored directly under the crest. The design process of Yucca Mountain has been going on for more than twenty years because it is imperative that all safety concerns have been addressed and the long term storage effects are known without a high level of uncertainty. There have also been political barriers that have slowed the process, as Yucca Mountain was supposed to start storing waste in 1998 but has still not been approved for operation.

There are many geologic features that are important to consider in designing this facility, including fractures in the rocks, seismic activity, and volcanic activity. There are more than eighty known faults in the

geologic formations that make up Yucca Mountain. These faults will dictate where the waste can be located because they show past movement of the rocks as well as predict future movement. Because the nuclear waste will be in the repository for thousands of years, long term geologic conditions must be considered. Earthquakes are a concern for Yucca Mountain because the waste containers could be breached if significant seismic activity occurred. The waste will be so far down that the effects of ground motion are predicted to be insignificant. It has been determined by the DOE that volcanic activity is highly unlikely and, therefore, is not a factor that needs to

the percolating water becomes contaminated and then enters the saturated zone, it could move away from Yucca Mountain and eventually affect the human population. The penetrating water could also become heated to levels significantly higher than normal if it comes in contact with the containers.⁸

Yucca Mountain, as proposed, will store mostly spent nuclear fuel and other high level radioactive waste. It could also store low level waste that is highly radioactive and excess plutonium, which is highly toxic. The system consists of multiple layers of barriers which will not be corroded over time and which prevent the release of radiation from the nuclear waste. The containers and barriers that protect the waste must also prevent percolating water from becoming contaminated in order to prevent releases into the environment. The proposed design consists of 120 miles of tunnels over an area of 840 acres. This would be able to store 70,000 metric tons of waste material at full capacity. "The original design concept envisioned vertical emplacement of simple steel canisters in individual boreholes; current plans call for end-to-end horizontal emplacement of large, complex waste packages in parallel, excavated drifts" which is shown in Figure 2.⁹

The repository has been designed with maximum safety considerations. Possible exposure pathways by which humans can come in contact with the nuclear waste have been studied extensively through complex modeling. The major pathway of concern is infiltration of the vadose zone (due to

corrosion of the containers or diffusion through the containers). If this occurs, then the contaminants can be transported, through the groundwater, away from the site and contaminate drinking water or irrigation water. The contaminants in the groundwater can also volatilize and be inhaled by workers on site as well as populations located where

uncertainties in modeling and in the long term effects.

The DOE has spent more than \$9 billion on the project already, which makes it a very costly mistake if it is not approved.¹¹ The NWPA established the Nuclear Waste Fund which is funded by electricity consumers who have paid one tenth of a cent for every

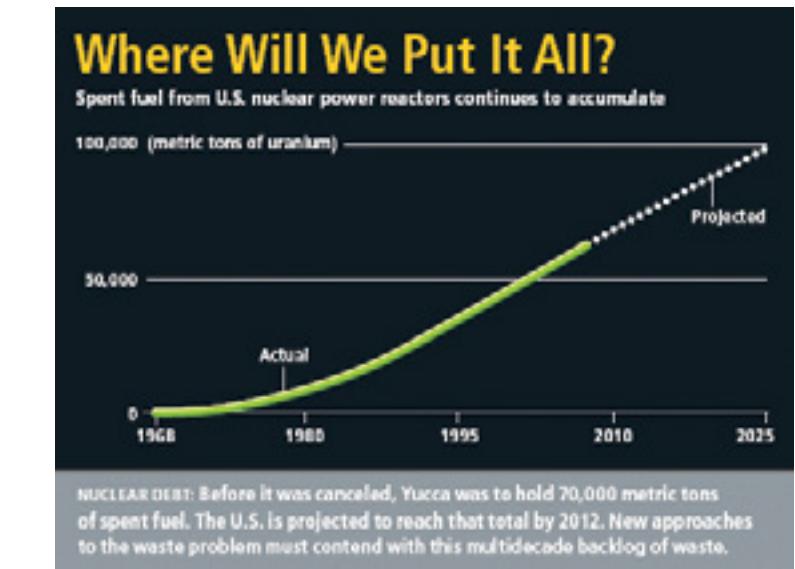


Figure 3: Accumulation of Nuclear Waste.

the contaminated gas in the atmosphere moves to.¹⁰ It has been determined that exposure is not an issue and the storage of nuclear waste under Yucca Mountain is safe, however, the models used to assess these exposure pathways have a degree of uncertainty to them, which has been a point of weakness in the proposal for Yucca Mountain that opponents have preyed on. This has caused a battle between science, which has proof that the repository is safe, and politicians, who do not accept the

kilowatt-hour of energy produced at a nuclear power plant since the act was established. The fund not only gets money from energy consumers, but also gets interest each year and, as of May 2013, the balance of the fund is over twenty-nine billion dollars. This money is being used to find a sustainable solution to the problem of nuclear waste disposal, and the DOE has focused all of its efforts and funds on Yucca Mountain as the most feasible solution.

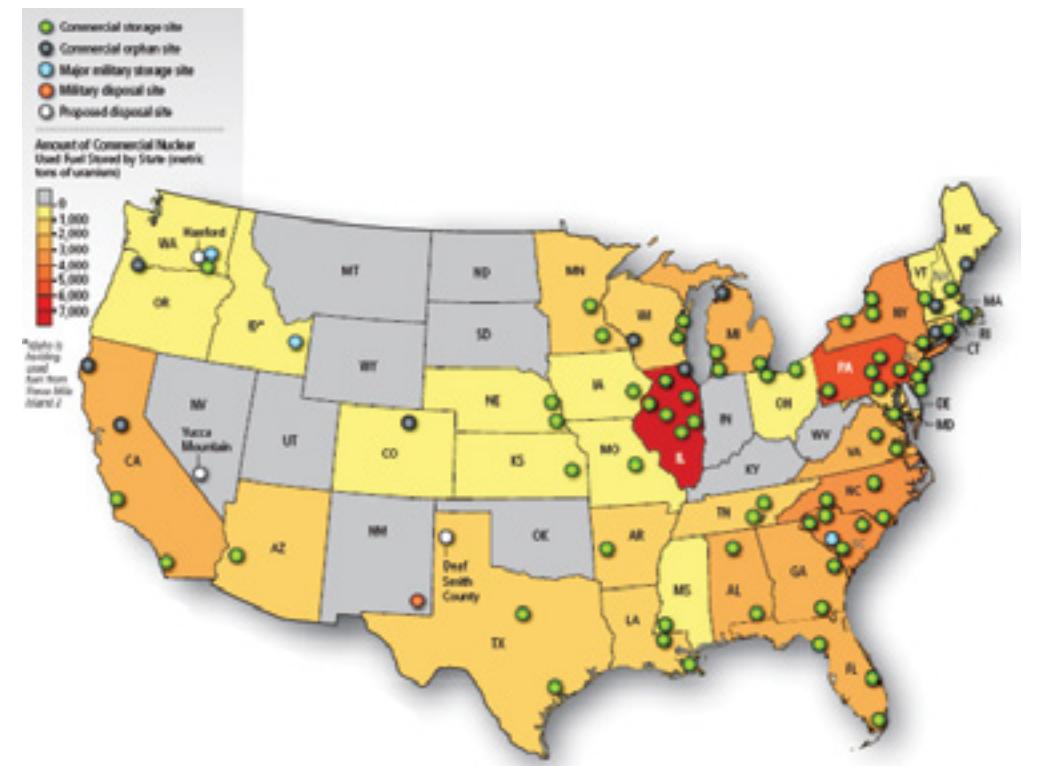


Figure 4: Current temporary storage locations of spent nuclear fuel and high-level radioactive waste.

3 AN ETHICAL DILEMMA: DO THE BENEFITS OUTWEIGH THE RISKS?

Yucca Mountain is the most researched and developed piece of land for a nuclear waste repository in the United States. In addition, the project has become a household name in the controversy surrounding nuclear waste management: do the benefits of a implementing a centralized facility for nuclear waste outweigh the risks to society and the environment? There are elements of concern for public health, the environment, national security, and the economy. This uneasiness arises from the fact that establishing a permanent nuclear waste facility is uncharted territory in the United States. Since the Yucca

Mountain project is the first of its kind, all of the information that currently exists is based on assumptions. How will decision makers sift through the facts and the propaganda to discern whether or not the implementation of a repository at Yucca Mountain, amid vast uncertainty, is ethically justifiable? This section will delve into these issues.

3.1 Defining the Benefits

Yucca Mountain was first identified as a possible site for a nuclear waste repository because of its geologic characteristics, as discussed previously. The site is on unpopulated Federal Government land about one-hundred miles northwest of Las Vegas,

Nevada and is also adjacent to the Nevada Test Site, where hundreds of nuclear weapon tests have been conducted. Yucca Mountain has a semiarid climate, receiving about seven inches of rain per year. In addition, the closest groundwater to Yucca Mountain is about 1000 feet below the planned repository location. Since water is the primary means of transportation for radioactive elements, this isolation from water exposure is extremely appealing.¹² In its 1998 Viability Report of Yucca Mountain, DOE projected that these geologic factors, coupled with engineered controls, have the ability to keep water away from the nuclear waste for thousands of years.

Another benefit is that the use of Yucca Mountain would consolidate all of the nation's nuclear waste. According to the National Energy Institute (NEI), nuclear waste is stored temporarily at 131 locations in thirty-nine states, including sixty-six operating nuclear power plants. Nuclear waste is not any more secure in facilities close to operating plants in densely populated areas than in a remote location hundreds of feet underground. Additionally as more nuclear waste is produced, safe storage will become more and more difficult without a large centralized repository. In 1996, the Nuclear Waste Technical Review Board (NWTRB) recommended that "the focus of U.S. policy should continue to be on the permanent disposal of spent fuel and high-level waste," especially with the increasing need for storage capacity. As decades of waste in temporary storage combine with new nuclear waste, projected in Figure 3, the need for a repository continues to grow.

The DOE design for Yucca Mountain is governed by heavy regulations. The EPA employed its best scientists and engineers to conduct a fifteen-year site characterization and risk assessment of nuclear waste at Yucca Mountain.¹³ From these studies, the EPA and DOE developed stringent radiation standards to be adhered to in the facility's design in order to protect workers, local citizens, and the environment. The license application filed by the NRC was originally approved in 2002, based on sound scientific evidence that safety concerns were being properly addressed.¹⁴

Economic benefits of the implementation of Yucca Mountain have been cited as well. If the government continues on the Yucca Mountain route, "the project will add \$228 million annually to [the] economy during construction and \$127 million annually during operation".¹⁵ It is estimated that 3,000 jobs will be created during construction, and 1,500 permanent jobs will remain once the facility operations begin.¹⁶

WITH THE PROJECT CURRENTLY TIED UP IN LEGISLATION AND NO IMMEDIATE PLAN B, ALTERNATIVE DISPOSAL OPTIONS NEED TO BE EXPLORED.

by the public. In the management of any kind of harmful substance, there is never an absence of risk, so engineers are charged with identifying an acceptable amount of risk. Therefore, Yucca Mountain does pose risk of radiation exposure to workers, nearby residents and the surrounding environment. Additionally, a large amount of uncertainty exists when predicting the future conditions at Yucca Mountain. How will the surrounding environment respond to the thermal load created by the facility in the long term? How will these changes affect future risk to humans and the environment? Unfortunately, the closest science has come to answering these questions is through computer modeling, which makes many simplifying assumptions to predict future conditions.

One of the biggest hurdles for Yucca Mountain has been the issue of transportation. How will nuclear waste from all over the country be safely transported to the repository? Figure 3 depicts where the nuclear waste is currently being stored and just how far it would have to travel to get to the repository. To reach Yucca Mountain, the majority of the waste would have to be transported cross-country from along the east coast or from eastern parts of the Midwest, like Illinois. This means distances from 1500 miles to almost 3000 miles. From Nevada's point of view, national transportation of nuclear waste is the most glaring, underexplored issue surrounding the Yucca Mountain project. With the huge mass of radioactive waste stored around the country, thousands of truck and

NANOTECHNOLOGY HAS BEEN PROPOSED TO SEPARATE AND NEUTRALIZE RADIOACTIVE WASTE ELEMENTS.

train shipments would be needed. Both transportation workers and citizens living along transportation routes would be subject to routine radiation exposure from traveling

casks of nuclear wastes. A transportation accident involving nuclear waste would be even more catastrophic.¹⁷ In addition, the national transportation of nuclear waste, which has never been embarked on before, would make the nation more susceptible to terrorist attacks.¹⁸ Cross-country nuclear waste transportation has the potential to compromise public health, environmental well-being, and national security.

Economic disadvantages to implementing the Yucca Mountain project have been projected as well. First, billions of dollars would need to be put toward liability costs for public safety. This number is currently estimated at \$3.7 billion.¹⁹ The

state of Nevada cites that the negative stigma of nuclear waste will be a detriment to the local economy, which thrives partially on Las Vegas' tourism. Property values around Yucca Mountain would decline. Additionally, the values of property along major nuclear waste transportation routes would be negatively impacted.²⁰ In terms of job creation, many would argue that opportunities will be created during construction and will then drastically decline during full operation. As a whole, the people of Nevada feel that the negative economic possibilities are more glaring than the positive potential of job creation.

3.3 Discussion of Ethics

Assuming that the generation of nuclear waste continues, a number of ethical questions can be raised regarding the decision to implement the Yucca Mountain Project:

- Are the Yucca Mountain's risks posed to the public and the environment justified?
- Which is worse: the risk to people in the direct vicinity of Yucca Mountain or the risk to people near temporary nuclear waste storage sites around the country?
- Is implementing this solution now worth the long-term uncertainties?

This section will discuss these issues from a utilitarian perspective, a pragmatic point of view, and a rights ethics standpoint. In terms of Act-Utilitarianism, a particular action is right if it is likely to produce the

most overall good for the most people in a given situation, compared to the alternative options.²¹ A cost-benefit analysis from the utilitarian perspective would argue that Yucca Mountain is the most favorable option for the nation as a whole. The risks to the people and environment at the centralized location of Yucca Mountain are apparent, but this radius of impact is far less than that of temporary storage facilities around the country. Continuing to fill up these temporary facilities will put many more people and ecosystems at risk. The end goal of the Yucca Mountain project is to house all of the nation's nuclear waste. The utilitarian decision maker might hold this end goal and its benefits paramount, and write off the risks of the means to achieve this goal, as well as the long term uncertainties. On the other hand, when discussing the issue of transportation, a utilitarian may argue that a cross-country voyage of nuclear waste could potentially impact more people than leaving the waste in temporary storage.

In a quantitative hierarchy of people and environments at risk, the transportation scenario would trump all others, and one may conclude that Yucca Mountain is not the most favorable option.

Pragmatism is a theory based in the practical applications of proofs. Our society has the desire to discover truths through scientific experiments and relate new data to old documented cases.²² Since Yucca Mountain is the first facility of its kind researched and developed for the United States, pragmatic decision makers may look

to international cases in which deep geologic isolation of nuclear wastes was utilized in order to get a better handle on how the local community and environment were impacted in existing cases. A pragmatist may put the scientific facts and economic projections of Yucca Mountain before political concerns, making him or her more inclined to support the project. For example, a researcher from the EPA would be inclined to support Yucca Mountain after the risk assessment was conducted. However, since pragmatism is rooted in experimentation, it is open to criticism and collaboration so that everyone has a say. Other pragmatists would certainly bring the transportation debacle into the discussion, since it is the least developed part of the project. The pragmatist decision maker may choose to hold off on the implementation of Yucca Mountain due to uncertainties across the board, until research and development can clarify the risks.

In rights ethics, human rights are top priority. Most rights ethicists affirm the existence of two kinds of rights: liberty and welfare. Liberty rights are defined as "rights to exercise our liberty, place duties on other people not to interfere with our freedom". Welfare rights are defined as "rights to benefits needed for a decent human life, when we cannot earn those benefits...and when the community has them available".²³ The view of a rights ethicist on Yucca Mountain would be more black and white than the previous utilitarian or pragmatic arguments, but could argue both sides. A decent human life does not involve being

subjected to the risk of radiation exposure. The national government and scientists are trying to compromise the liberty of Nevada citizens for their own agenda. Therefore, continuing with the Yucca Mountain project despite stark opposition from those locally affected would be out of the question. On the other hand, citizens near current storage facilities would say the same thing: that possible exposure to nuclear waste is an infringement on their liberties. However, since the practice of temporary storage has been occurring for some time, and assuming the majority of people are not fully educated on the risks, there is likely to be less opposition to continuing to temporarily store nuclear wastes in present facilities. Once the idea of getting it out of their backyards comes into play, the people will be more inclined to exercise their liberties and fight for Yucca Mountain because of the stigma of nuclear waste. On both sides of the argument

however, a rights ethicist may be hesitant to support the project because the long-term risks are so unclear.

4 ANALYZING ALTERNATIVES TO YUCCA MOUNTAIN

With the Yucca Mountain project currently tied up in legislation and no immediate Plan B, alternative disposal options need to be explored. The Blue Ribbon Commission on America's Nuclear Future (BRC) was established to "provide advice, evaluate alternatives, and make recommendations for a new plan to manage the back end of the nuclear fuel cycle in the United States".²⁴

The Disposal Subcommittee submitted its final report to the DOE in January 2012, establishing a methodology for developing disposal options for nuclear wastes "in a manner and within a timeframe that is technically, socially, economically, and politically acceptable".²⁵ The report presents mistakes made by the DOE that led to the Yucca Mountain program's failure to meet commitments and to act and a transparent manner, and loss of trust from the public and key stakeholders. However, it does acknowledge that, "deep geologic isolation continues to be the most promising and technically accepted disposal option available today".²⁶ The following sections will provide an ethical analysis of the three routes the United States could take from the current state of nuclear waste disposal: (1) continue with temporary disposal, (2) implement deep geologic isolation facilities, or (3) research and develop new technologies.

4.1 Temporary Disposal

Obviously, continuing to temporarily store nuclear waste in multiple locations around the country is the least favorable option. However, with the current state of the Yucca Mountain project and few researched and developed alternatives, the accumulation of nuclear fuel and high-level radioactive waste will continue accumulate indefinitely. However, catastrophic incidents involving these temporary facilities are rare and transportation of nuclear waste would put many more people at risk. Diving into new technologies that may cause more harm

than good should not be pursued until more research has indicated that is it less harmful than the current method.

4.2 Deep Geologic Isolation

Internationally, disposing of nuclear waste via deep geologic isolation is the most researched and utilized method.²⁷ Scientific findings have given people enough confidence to fight for the implementation of Yucca Mountain. In a way, the biggest opponent the project is the “not in my backyard” mentality of Nevada residents. People of other towns have expressed their confidence in the science behind constructing a repository and are interesting in the economic benefits. For example, the citizens of Carlsbad, New Mexico want to take on a nuclear waste repository because of the prospect of economic growth and increased jobs.²⁸

Strangely, their main opposition comes from the outside - “Although touted as the solution, finding a consenting community is merely the first step. The harder part is getting everyone else to sign on.” The main justification for opposing a site that the residents approve of would come down to risk transportation of nuclear waste to the site poses.

4.3 Research & Development of Emerging Technologies

Many promising new technologies exist that could completely change the way we look at nuclear waste in the United States. Nanotechnology has been proposed to separate and neutralize radioactive waste

elements. Transmutation, or the changing of one element into another, could be used to convert the waste elements into less harmful material. Certain microbes have been genetically engineered to withstand radiation and to use nuclear waste elements as a food source. The waste can be reprocessed to remove useable fuels and higher-level radioactive elements. Finally, high-energy magnetic fields can be employed to separate waste components.²⁹ The issue with all of these emerging technologies is that they are fairly new. The research is there, but none have been developed enough to be implemented in the near future. It is difficult to justify using one of these technologies in place of one like deep geologic isolation that has been extensively developed and explored.

5 CONCLUSIONS & RECOMMENDATIONS

The current state of nuclear waste disposal in the United States is not sustainable. As nuclear power facilities continue to operate, more and more nuclear waste is produced and stored on site. Temporary on site storage is not infinite. Yucca Mountain was proposed over two decades ago as a potential permanent solution. Currently, Yucca

Mountain still has not been implemented for the disposal of nuclear waste.

Through extensive research and development operations, scientists have found many benefits associated with Yucca Mountain. The site itself is geologically favorable because of its remote location and its distance from ground water resources,

among other positive geologic features. Use of the site would consolidate all of the nation’s nuclear waste to one place and prevent the possibility of widespread exposure. The research that has been conducted over two decades has led to stringent radiation standards to protect workers, local citizens and the environment. Finally, the construction and operation of the facility will create jobs and other economic benefits.

The benefits, so far, have not proven to be enough to outweigh the risks. Nuclear waste has a negative stigma. Therefore, the perceived risk to the public is greater than the actual risk. For this reason, the Yucca Mountain project is met with a large amount of opposition from the State of Nevada and its citizens. The physical transportation to Yucca Mountain from nuclear waste generators across the country remains underexplored and undeveloped. More risks are associated with transporting the wastes than with leaving it at the temporary storage facilities. Additionally, property values around the Yucca Mountain facility and along nuclear waste transportation routes would decrease, negatively impacting the economy.

From an ethical point of view, the theory pragmatism as a basis for judgment would be the best way to assess the Yucca Mountain issue. As discussed earlier, pragmatism is heavily based on science, but is also open to constructive criticism to encourage the best possible scenario. The arguments in favor of the implementation of Yucca Mountain are heavily based on years of research, but

are criticized by society. Moving forward, research and development agencies need to be more transparent with the public in order to regain trust in the project.

THE MOST IMPORTANT IMPROVEMENT TO THE PROPOSAL THAT NEEDS TO BE MADE IS COMING UP WITH A SAFE AND EFFECTIVE METHOD OF NUCLEAR WASTE TRANSPORTATION.

permanent solution the United States as of now. However, it should not be implemented until the benefits clearly outweigh the risks. The most important improvement to the proposal that needs to be made is coming up with a safe and effective method of nuclear waste transportation. 

Although a permanent method of nuclear waste disposal is necessary for the United States, it is not a dire, immediate need. Storing waste on site has proven to be effective with minimal environmental and human health impacts. Eventually, nuclear wastes will accumulate to a point that a facility like Yucca Mountain is necessary. Since this has not proven to be a time sensitive issue, more research should be done in order to minimize the uncertainties. As long we have space to safely store nuclear waste and are in the process of developing a more permanent solution, we can continue to use nuclear power. Yucca Mountain is the best

PHOTOGRAPHY

TRAFFIC POLICE

Luchen Wang

I took this photo with a 3-stop neutral density filter. Shutter speed was at 1/6 second, in order to blur out the moving vehicles, and at the same time keep the traffic officer sharp.



MAGIC HOUR

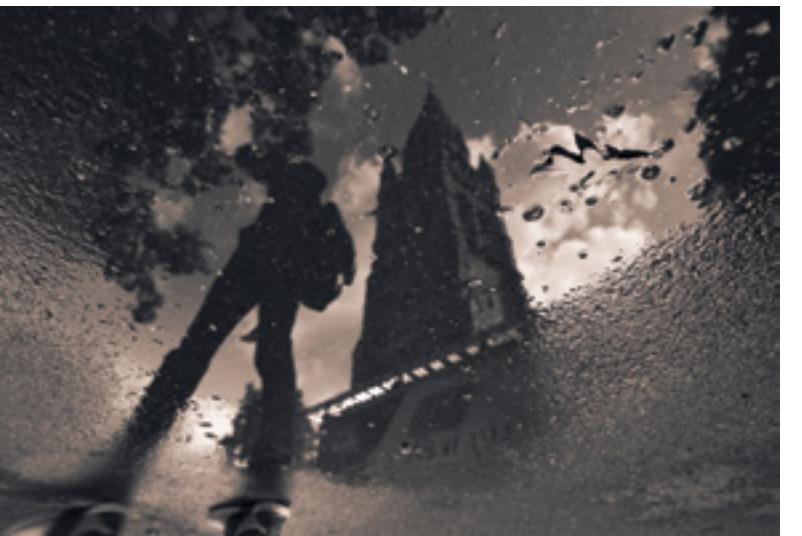
Sathya Ram

I started roaming around and happened upon this beautiful scene during a layover in Frankfurt, Germany.

DRIVE

Sathya Ram

I was driving back from DC one late night, and there was no one in sight, so I stopped in this desolate underground tunnel to snap this ominous scene.



UNTITLED

Luchen Wang

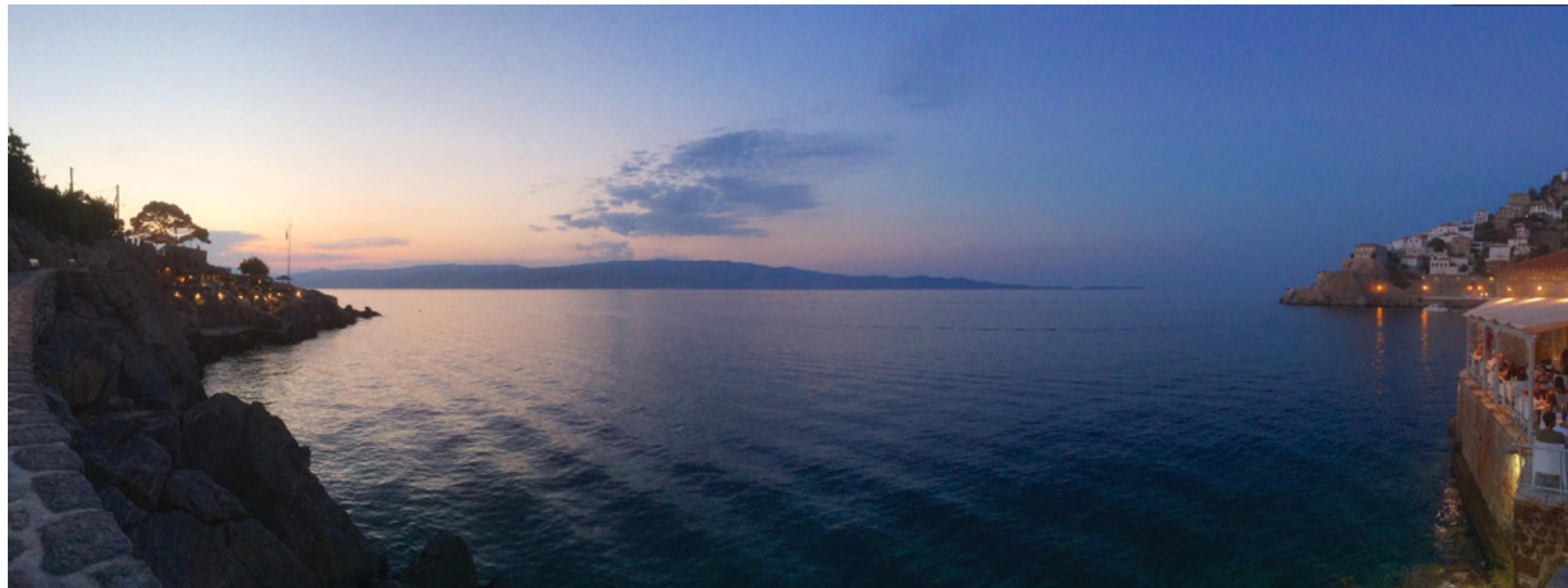
This photo was taken in front of Packer Memorial Church at Lehigh University. The editing technique used was Gradient Map. Special thanks go to my model Kaung Zeya. He had to walk back and forth multiple times in order to create the ideal composition.

VORTEX

Sathya Ram

This photo was the result of a project on light painting using a Hammerschlag design build in ephemeral space.





TWILIGHT

Barbara Tsousis

This photograph depicts all of the best parts of a Greek island vacation: the water, the architecture, the sunsets, and, of course, the food.



ILLUMINATE

Sathya Ram

It was a warm summer night and bugs were out to play; perfect snack for the spiders.



STREETS OF BETHLEHEM

Sathya Ram

Dark clouds over a quiet street in Bethlehem.



IMPERIAL

Danielle Campbell

This photo was taken on top of the Imperial Express in Breckenridge, Colorado in December of 2014. The powder had only been touched by a few skiers by the time this picture was taken after the run opened following a snow storm.

HYDRA Barbara Tsaousis

This photograph was taken on a warm July afternoon in 2014. The donkeys and boats are significant because they are the only form of travel on the Greek island of Hydra--the island is entirely free of wheeled vehicles. This brings a unique experience to tourists and gives them the opportunity to experience Greece without the bustling characteristic of a popular Greek city or island during the summer months.

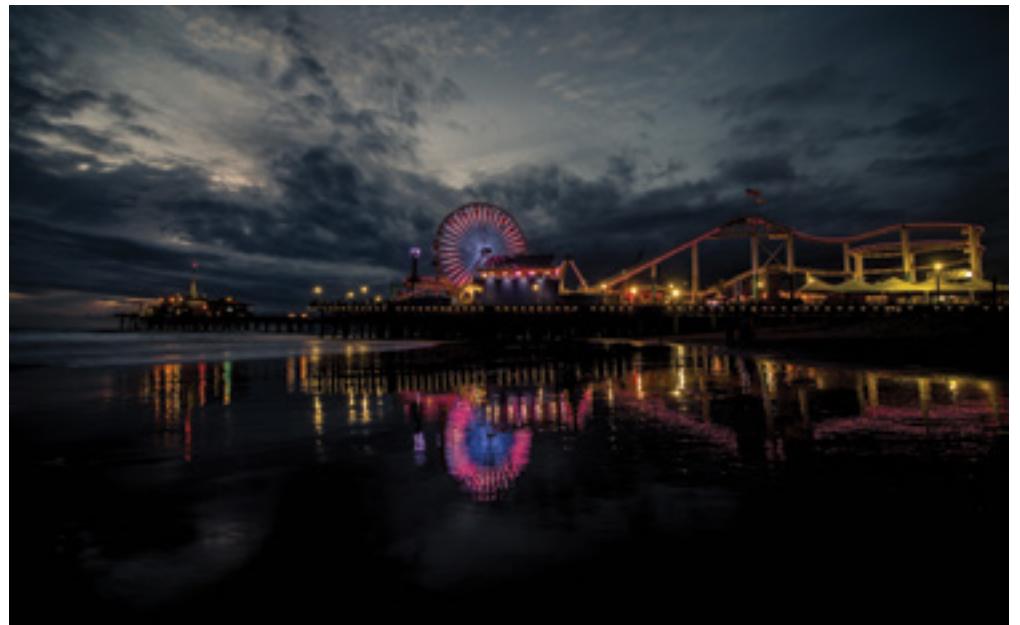


GOLDEN GATE BRIDGE Luchen Wang

This photo was taken at Battery Spencer in San Francisco. The Golden Gate Bridge is usually covered in fog in the morning. I went there at three in the morning everyday for a week and was lucky enough to finally get this shot. I used slow shutter speed to get enough light and blur out the water.

SANTA MONICA PIER Luchen Wang

This photo was taken at Santa Monica Beach in Los Angeles, CA. I tried to capture the changing color of the Ferris Wheel.





DETAILS IN ARCHITECTURE
Jonelle Jerwick

EMERGING VOICES

Introduction The staff of the Lehigh Review has once again collaborated with the Office of First-Year Experience to compile a selection of outstanding first-year writing samples for the “Emerging Voices” section of the journal. In the summer of 2014, incoming Lehigh students were, for the first time, given the option to choose one of two summer reading books. The first was Bathsheba Monk’s *Now You See It...Stories from Cokesville, PA*, a novel that weaves together several generations of Polish-American families living in a steel-mill town inspired by Bethlehem and the Bethlehem Steel Company. The second was *Class Matters*, a collection of articles about class in America, originally published as part of a *New York Times* series. The first-year students were asked to think and write critically about their own opinions regarding class and identity in education and how this may have impacted their educational career and college search. They were challenged to analyze the relationship between their own identity and class and how that might change as they matriculate at Lehigh. We are proud to showcase the responses written by this exceptional group, who remind us that excellence at Lehigh begins in the first year.

KERSTIN SCHKROBA

I am a strong believer that one does not have to go to college to be successful. That being said, I chose to continue my education after my mandatory twelve years were up. When I started my college search, I had to do some serious self-reflection about why I wanted

to go on to college. It had never crossed my mind to not attend. It always seemed the logical progression: elementary school, middle school, high school, college. I had to seriously think about what I wanted to do in life, and what I wanted to get out of my life.

I have always loved medicine, and I know that, to pursue that,

higher education is required. I have never envisioned myself in retail positions, or even managerial like my father. I think there is a niche of professions that I see myself happily working at, and in the medical field is where most of them lie. In relation to class systems, there is an overlying assumption that doctors are in the upper class, but I think that is the reward for putting in ten-plus extra years of school.

I have friends from high school who never went on to college; they got trade jobs, and they are doing just fine for themselves. I feel like they are in a good place emotionally, and I think they are happy with their lives. They made their own choices about pursuing amount of education they felt they needed. I think, for some, it was about their own personal happiness; they did not enjoy traditional education, so they went for a route that allowed them to learn on the job and build the skill set they wanted.

I think there are, however, people who go to college for fear that they will get a mediocre job and not be able to support themselves financially through all they want. They choose college because they believe that all people in the lower class did not go to college, and attending is the golden ticket into the middle class. I think this is a foolish view to have, as there are certainly people who attended countless years in higher education and still don't end up having the romanticized movie-ending "rich" lifestyle.

I think that lumping class systems with education can become a slope of judgment and personal bias. Anyone can become

"successful" and make money to become in the upper classes if that is the lifestyle one so desires. Reading the books, they defiantly try to portray the lower class as less educated, and that is not always the case. I also think that, as long as that stigma still remains, people in the lower class will always have an unreasonably hard time trying to move up the social ladder if that is what they desire.

While the promise of a high class life was not what drove me to my chosen profession, I do understand that it is a "high-risk / high-reward" job, and after I invest so much time and money into my education now, it is nice to know that there will be benefit on the other end, but that was not a deciding factor. I truly believe that anyone can move through the class systems with or without education.

MATT ENSLIN

I was born into a Wall Street world of extreme comfort and arguable excess, surrounded by those who considered themselves to be highly successful people. In this elite world, driving through the nearby areas of Harlem and Newark often proved to be a stark reminder of the differences in class throughout this country. The pressure to achieve, to maintain the perceived level of class that I was born into, was often stifling. Unsurprisingly, the method of maintaining this tradition of remaining in the upper echelons of socioeconomic status was through achieving higher education. Since I was a young boy, even before the age

of ten, the idea of going to either an Ivy League or generally upper tier university

was not exactly an option. My parents spent thousands on private education, personal tutors, and essentially everything they could to ensure that I could be everything they dreamed I would be. My parents believed, like much of this country, that class was not determined by money exclusively, but by level of education. My father was raised by college professors in the Ivy League town of Princeton, New Jersey, and was exposed to the intellectual elite from a young age. Surrounded by anthropologists, microbiologists and mathematicians, it became ingrained in his psyche that class comes with education. A good education will open doors to you like no other avenue can, whether those doors have monetary rewards or not. Then, when he entered the cutthroat world of Wall Street after his education at Lehigh, he saw those without prestigious degrees being tossed aside and not considered for important positions.

Regardless of vocational field or monetary prosperity, it was clear to my father that educational levels divided people, and he wanted to ensure I would never have my education (or lack thereof) hold me back. However, I have always had a bit of an inner conflict when it comes to vocational prospects and my immediate future. Since I was a little boy, I have had a deep love of English, history, and the social sciences. However, growing up in a world of Mercedes-Benz and Brooks Brothers changed my notion of class from what my parents believed. Despite my parents' staunch belief in the educational determination of

what society decides as "class," I became obsessed with the acquisition of significant monetary gain. I was enamored with diamond watches, cars with V8 engines, and expensive vacations. When applying to Lehigh, I was obsessed with the fact that the university is known for having successful alumni. I got to campus knowing I wanted to major in business and join the upper socioeconomic class of society, just as my father had. However, two thirds of the way into my semester, I had a realization. I don't like business: it bores me. Knowing graphs and finance is not my ticket to respect and class: it is my education, after all. Whether it is justified or not, society determines class by level of education. It simply opens doors. For me to maximize my education, I have decided to pursue my passions of the liberal arts, and hope that society can recognize my gifts, whether it be fair or not.

MEGAN HSU

The relationship between my own identity and my class is arbitrary, but, at the same time, it is an integral part of my identity because I've been middle class my entire life. I don't really know what it's like to struggle financially because my parents have always had enough to support my family, not to mention my relatives are pretty well-off themselves. Though I've heard stories from my parents, who are immigrants, of financial hardship, I never really experienced it for myself. They, my dad especially, constantly remind my sister and me how lucky we are. And, unfortunately, such appreciation has

become trite for us because of our precarious relationship with him and what words he says. But, I digress. What I'm saying is that I lack an understanding of classes other than my own, comfortably resting in my middle-class bubble. Of course, there is poverty surrounding me; the financial climate of where I used to live was similar to that of Bethlehem. I lived in the suburbs, but the more urban area that was only ten

WHILE I WAS AWARE OF THE HARSHIPS PEOPLE HAD TO FACE, I DIDN'T FULLY UNDERSTAND THEM, AND THAT'S SOMETHING I'D LIKE TO CHANGE.

Even though I donated time to help those in difficult living situations, I don't feel like I fully understood their stories. As I mentioned, Bethlehem's economic situation is not much different from the one I came from. Of course, there's the noticeable barrier and additional tension between the community and the college, but the thing I like about Lehigh University is that it seems committed to reaching out to the community and demolishing said barrier. For example, one of the 5x10 activities I attended was the poverty simulation and even though it was only a simulation, it gave the participants a good idea of the stresses people in financially tight situations experience. The community service office members who organized the event were well-versed in the problems that affect the Bethlehem community and sincerely wanted us to help. I know poverty is a serious issue, and, up until now, I have pushed it out of my mind because of my upbringing. I hope my relationship with my class will change so that I not only appreciate what I have been raised in but also so I am able to understand and help others who do not share my luck. I do not want to stay suspended in a bubble of good fortune, as Lehigh University could easily become that way because of the student population and its reputation. I'm glad Lehigh offers opportunities to tie together the community and college and is aware of the importance of the issues occurring around it. I'm also glad it spreads the message to its students, encouraging us to use our talents and skills to think of solutions to problems affecting the

minutes away was laden with poverty. The school I went to was a public school that contained about 2,400 people, so I got to see kids who lived in the wealthier suburban neighborhoods and those who lived in the middle of the downtown's less-than-stellar state. While I was aware of the hardships people had to face, I didn't fully understand them, and that's something I'd like to change.

community. I hope I can contribute as well, so that the Bethlehem community can make Lehigh a positive part of itself.

PRARTHNA JOHRI

I came from a small town in New Jersey before I went to college. There were the rich areas and the not so well off areas, and there were the in-between areas, and there was no one in the town who cared where you were from. What finally differentiated people in my town was where they ended up for college. More than fifty percent of my grade either went to community college or went straight into the work force. But what is really not that surprising is that there is no real correlation between class and where I have seen people go so far. An old friend of mine went from being club president and in the top ten percent of our class to dropping out of college, and someone who decided not to go to college took over his family business and is doing better than anyone could have imagined.

That being said, I find that ideally there should be a correlation between education and class; that, if I am going to college and paying anywhere from twenty to sixty thousand for tuition, that I should be guaranteed a job and at least a middle-to-high class standing. It seems that going to college and throwing my family's and my life savings away should determine me a bright future with a shiny car and a large house with a green lawn. However, if you look at the really successful people in this day and age, how many of them dropped out of college?

How many of them struggled in school and were told that they had no talent? So, from what I have seen, class has not determined education and education has not determined class.

But, that does not stop me and everyone I know from "investing" in "good" colleges and picking career choices not that we enjoy, but that will reap the most amount of money in the future. When I began looking at

stayed in Cokesville, and those who did and went to college or just left the town were presumed free. However, even Theresa Gojuk, for all her good looks and acting skills, for all her cutting of ties from her hometown, never quite made it out. So, perhaps the moral of the story was do not become an actress.

Or, more likely, the book preached that, even if you leave your town, leave the class you were born in through whatever means necessary, a part of that will always remain in you. In this day and age, it doesn't matter what class you are as there are opportunities overflowing for scholarships in education, and, as long as you can get that college degree hanging on your wall, you can use it to dig yourself into or out of any hole and then leave it to hang on your wall and gather dust for the rest of eternity. □

WHAT FINALLY DIFFERENTIATED PEOPLE IN MY TOWN WAS WHERE THEY ENDED UP FOR COLLEGE.

college majors, the only advice I got revolved around, don't pick that major, you will never find a job with that. So, even if I know that college does not necessarily align me with a higher class, with a guarantee of success, that doesn't stop me from hoping it will.

However in *Now You See It*, there was a direct correlation between education and class; those who did not finish high school

The staff of the *Lehigh Review* would like to thank Allison Ragon and Emily Shreve in the Office of First-Year Experience for their continued collaboration on the "Emerging Voices" section.

ABOUT THE CONTRIBUTORS

BARBARA TSAOUSIS is a first-year student working towards a B.S. in molecular biology. Her goal is to complete both MD and MPH degrees and become a neurosurgeon.

CHRISTOPHER HERRERA is a graduating senior, majoring in design with a concentration in graphic. He is very passionate about design and illustration and has been in love with the arts since he was a child. He attributes his growth as a designer to his time at Lehigh.

DANIELLE CAMPBELL is a first-year student. She plans to major in English and sociology and to eventually move onto the College of Education for her fifth year.

ELIZABETH PHILLIPS is a design major with a concentration in graphic design and is currently a Presidential Scholar studying to complete a second bachelor's degree in English and getting a second design concentration in product design. She is a member of Fusion Design Studio, AACD (Art, Architecture, and Design Club), and Interns at Lehigh's Department of Communications. This summer Elizabeth will participate in Lehigh's Mountaintop Research Program and will finish her studies at Lehigh in December 2015, at which time she intends to pursue a career in design.

ERIN LIDL is a senior studying psychology along with a minor in studio art. She enjoys working with children and hopes to pursue a career in art therapy.

GRACE JOHNJULIO is a junior majoring in graphic and product design with a business minor. She is Design Manager for *The Brown & White*, a Photographer's Forum finalist, and a member of Alpha Omicron Pi. Amidst a myriad of creative projects and processes, typography has become a recent passion of hers.

HANNAH HAN is currently a senior double majoring in architecture and art. She hopes to continue her architectural education in graduate school while continuing to make art.

JACLYN SANDS is a second-year student majoring in studio art and graphic design, and minoring in French. She hopes to complete her degree in three years, enabling her to graduate in 2016. She is a Dean's List scholar, the 2015 recipient in the studio art category of the merit-based Horger Scholarship, and the vice president of the Art, Architecture, and Design Club.

JADE VAN STREEPEN is a member of the class of 2015 and is a Dean's List student pursuing a B.S. in environmental engineering. Jade was the captain of Lehigh University's varsity women's volleyball team as well as a member of the Lehigh Athletics Leadership Academy, a Student Athlete Mentor, and the treasurer of the American Academy of Environmental Engineers and Scientists. She is also a Martindale Student Associate.

JONELLE JERWICK is a senior architecture major who will attend graduate school in the fall. She is on the Lehigh track and field team

as a pole vaulter. In her free time, she enjoys traveling and the outdoors.

KATIE HOOVEN is in her fourth year of the five year Arts/Engineering program, double majoring in civil engineering and architecture. She plans to pursue engineering with hopes of integrating her architecture background into her engineering designs.

KERSTIN SCHKROIBA hails from Maine. She is a first year CAS student, and is currently taking classes to become an EMT.

LUCHEN WANG has been doing photography for four years. He likes to photograph girls, flowers, sunsets or anything pretty. His goal is to create pleasant images.

MIN JUN KIM is pursuing a degree in sociology with minors in entrepreneurship and music industry. Passionate about the relationship between culture and business, Min's Eckardt Scholar thesis research—as presented at the 2015 Eastern Sociological Society Conference in NYC—focuses

on the intersection of popular culture and race and class inequality, viewed through the lens of the hip-hop and basketball industries. Apart from his academics, Min is heavily involved in the music scene at Lehigh as a DJ and music director of University Productions.

MONIKA MARTIN is a senior majoring in biology. She discovered her interest in art history at a young age when her father, an oil painter, took her on a trip to the

Philadelphia Museum of Art. After graduation, she hopes to pursue a career in marketing.

NATALIE TACKA is a senior studying environmental engineering. She participates in undergraduate research with a focus on water quality and waterborne pathogens. She has played Varsity Field Hockey for the past four years and is an active member of Alpha Omicron Pi.

NINA MIOTTO is a junior at Lehigh, studying pharmaceutical chemistry. In addition to the sciences, she has always had a passion for art, which is why she is minoring in studio art. She's taken drawing I, painting I, and is currently taking painting II through Lehigh's Art Department.

PRARTHNA JOHRI is a business major who was pretty surprised to have her piece published. She's actively involved in her sorority, as well as multiple clubs.

RACHEL MAYER is a senior majoring in the Integrated Degree in Engineering Arts and Sciences Program with concentrations in industrial engineering and product design. She is currently the Alumni Engagement Chair for the Association of Student Alumni, a Senior Class Gift Team Leader, the Class of 2015 Class Correspondent, an Admissions Fellow, and a Lehigh Fund student worker.

Rachel enjoys finding awesome new restaurants, visiting breweries, and spending as much time as she can with her Alpha Gamma Delta sisters.

ROBERT MASON is a senior environmental science major. He likes spending time outdoors, learning about nature, and playing the ukulele.

SATHYA RAM is an eclectic who focuses on modern design and challenging photography. He has a passion for film, the web, and the world.

SAVANNAH BOYLAN is a current senior studying international relations with a minor in studio art from Atlanta, Georgia. Her artwork is currently featured on the art website Easely.

YIYI CHEN is a sophomore accounting major and Japanese minor. Yiyi enjoys her life at Lehigh, and she is involved in many student organizations, such as Student Senate XXVII, LeaderShape, Global Union Core Committee, and so on. Even though she is not in the College of Arts & Science, she has a great passion for art and always has creative ideas in her mind. In the future, she will keep creating great painting pieces.

YUQING YE is a third-year architecture major from Beijing, China. She puts passion and dedication into her design. She looks forward to a career in the field of Architecture.

ZHENYU LI is a freshman industrial engineering major. She has been drawing since the age of nine and truly enjoys every moment spent in her studio.

ARTWORKS THAT DID NOT APPEAR IN THEIR ENTIRETY



SAXAPHONE AND BABY Luchen Wang

This photo was taken at Central Park, New York City. It was shot with a Fuji X-e1 mirrorless camera and a Voigtlander 40mm F1.4 manual lens.



SANTA MONICA PIER Luchen Wang

This photo was taken at Santa Monica Beach in Los Angeles, CA. It was a beautiful sunset. I used a neutral density filter to darken the sky. Shutter speed was slow to capture the movement of the water.



LINDERMAN MEMORIES Rachel Mayer

I created this piece in my spare time while I was reflecting back on my time at Lehigh. It was created with water color and pen.



UNTITLED Hannah Han

This work was done with an oil paint stick and paint thinner on mylar. I made this on my free time.



SOLO Sathya Ram

Chance the Rapper performing a haunting, soulful, personal piece in the limelight.



ANOTHER LOOK Nina Miotto

This piece was an assignment called "Another Look" in the Painting I course done in oil paint. The purpose of the assignment was to take an image and render it in a way in which you would take "another look" at it. Regarding technique, I used a grid and underpainting process to replicate my original image into a painting.



TIME ENJOYED WASTING Grace Johnjulio

This piece was created as part of the final project in "Graphic Design II: Word and Image" with Professor Marilyn Jones. The objective of the assignment was to create a book that is a visual statement to reflect either music or a social cause that is experimental and demonstrates creative thinking. The final book included six original, hand-drawn typography pieces of John Lennon quotes. The process included drawing the quotes with pencil on paper, going over the outlines with black

Micron pens, scanning the images onto the computer, and final touch-up editing in Photoshop. The final book was printed and saddle stitched.



DROPLET Luchen Wang

The shutter speed for this photo is relatively slow (1/30 second). I shot it in a completely dark room and used flash to illuminate and freeze the object. It took about two hours of trying and failing to get the perfect timing.



DETAILS IN ARCHITECTURE Jonelle Jerwick

This photograph was taken inside of the British Art Gallery, a building designed by Louis Kahn. The structure, texture and lighting within his buildings evoke a calming effect which I believe was portrayed in this shot.

ABOUT THE STAFF

EDITOR IN CHIEF

ALEXANDRA CORRELL

Alexandra Correll is a sophomore international relations and English double major with a minor in creative writing. She is a Greek mentor, an avid writer, and a member of the Kappa Delta sorority. She plans to pursue a career in the publication industry.

DESIGN EDITOR

JUSTINE GAETANO is a junior majoring in graphic design and minoring in art history. This is her second year as a staff member for the *Lehigh Review* and her first time as an executive editor. She is a member of Fusion Design Studio and a Dean's List scholar. She plans to pursue a career in design.

MARKETING EDITOR

TORI YU is a junior double majoring in marketing and management, with a minor in Psychology. She is a coordinator for the Eco-Reps program, the social media and marketing assistant for the Office of Sustainability, a tour guide for the Office of Admissions, and a member of Kappa Alpha Theta.

ABBY JOHNSON is a junior majoring in journalism with a French minor. She is an assistant section editor for *The Brown and White* as well as a member of Phi Sigma Pi Honor Fraternity. In her free time, she enjoys spending time with friends and writing short

stories. After graduation, she hopes to move back to her hometown Chicago and become a copyeditor or work in Public Relations.

BETSY POWERS is a sophomore at Lehigh University pursuing a psychology major and business minor. Outside of the *Lehigh Review*, she is involved with Dance Marathon, Best Buddies and is an Orientation Leader.

CATHERINE PREYSNER is a junior pursuing a degree in mathematics with a minor in English Literature. She is a Dean's List Scholar, a Martindale Student Associate, and a member of the Summer Reading Selection Committee. Catherine works as a grader for the Mathematics Department and plays the French horn in the Lehigh University Philharmonic Orchestra. This is her second year as a staff editor for the *Lehigh Review*.

ERIN HANLON is a senior at Lehigh studying English with a double minor in entrepreneurship and studio art. She is a member of Alpha Omicron Pi women's fraternity.

MONICA SHELL is a junior majoring in design with a concentration in graphic. She works at Lehigh's IMRC designing and developing websites and other graphic projects within the university. She is also an active member of Fusion Design Studio, and a Strohl Grant recipient.

THE STAFF OF THE LEHIGH REVIEW
WOULD LIKE TO EXTEND OUR
SINCEREST GRATITUDE TOWARDS
OUR ADVISOR, LAURA KREMMEL,
FOR HER GUIDANCE AND
PATIENCE, AND ALSO FOR THE
NUMEROUS BATCHES OF
COOKIES BROUGHT TO CLASS.

ENDNOTES

DUBAI: THE SPECTACLE OF FLOWS

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FIGURES

- 1 Adapted from the Wikimedia Commons File: "Dubai New.jpg." http://en.wikipedia.org/wiki/File:Dubai_New.jpg
- 2 Adapted from Flickr Creative Commons: "Old Dubai." <https://creativecommons.org/licenses/by-nc-sa/2.0/>.
- 3 Courtesy of Yasser Elsheshtawy.
- 4 Courtesy of <http://www.nakheel.com/>.
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1 Adapted from the Wikimedia Commons File: 'Yucca Mountain waste packages.jpg.' http://commons.wikimedia.org/wiki/File:Yucca_Mountain_waste_packages.jpg.

2 Adapted from the Wikimedia Commons File: "Yucca Mountain Geology.jpg." http://commons.wikimedia.org/wiki/File:Yucca_Mountain_Geology.jpg.

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TECHNOLOGY, TRENDS, & TRANSFORMATION

examining the evolution of poster design

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YUCCA MOUNTAIN

*an ethical study of nuclear waste
disposal at yucca mountain*

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